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The Legislative and Institutional Framework to Control Pollution from Land Use Activities in the United States Great Lakes Basin. Volume II. States of Illinois, Indiana, Michigan, and Minnesota

Great Lakes Basin Commission, Ann Arbor, MI

Prepared for

International Joint Commission-United States and Canada, Windsor (Ontario)

Nov 77

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REFERENCE GROUP
S POLLUTION
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INTERNATIONAL
JOINT
COMMISSION

THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK TO CONTROL POLLUTION FROM LAND USE ACTIVITIES IN THE UNITED STATES GREAT LAKES BASIN

VOLUME II -States Of Illinois, Indiana, Michigan And Minnesota

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The document presents a description of the existing legislation/ regulation framework available at the Federal, state, special purpose district, county and municipal levels of governments in the United States Great Lakes Basin for controlling the nonpoint discharges of sediments, nutrients, pesticides, and chemicals associated with urban areas, transportation corridors, extractive operations, agriculture, recreational areas, forested areas, liquid, solid and deepwell disposal areas, shoreline landfilling activities, and lakeshore and riverbank erosion. It also describes the extent of the regulatory power, the commitment to develop and undertake programs and the degree of enforcement practiced at each of the specified levels of government.

Other relevant government and non-governmental programs and policies which would have an indirect bearing on the control of pollution from land use activities are identified and alternatives for the future evolution of this legislative/regulatory framework are presented.

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VOLUME II

THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK TO CONTROL POLLUTION FROM LAND USE ACTIVITIES IN THE UNITED STATES GREAT LAKES BASIN

STATES OF ILLINOIS, INDIANA, MICHIGAN AND MINNESOTA

(Note to reader: Chapters 1 and 2 in each of the State Reports are identical and will not be repeated throughout this Volume. Please refer to State of Illinois Report in this Volume for these two chapters.)

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Washington, D.C.

IN SUBCONTRACT TO
GREAT LAKES BASIN COMMISSION
ANN ARBOR, MICHIGAN

To be used as a portion of the technical reports
of the International Reference Group on
GREAT LAKES POLLUTION FROM LAND USE ACTIVITIES
of the International Joint Commission --
Prepared in partial fulfillment of the
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November 1977

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THE STATE OF ILLINOIS

PREPARED BY
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16

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This study was carried out as a part of the Task A activities of the Pollution from Land Use Activities Reference Group, an organization of the International Joint Commission, established under the Canada/United States Great Lakes Water Quality Agreement of 1972. The Technical Representative for the study was Eugene A. Jarecki, Great Lakes Basin Commission. Findings and conclusions are those of the authors Eric Schweitzer and Barbara Roth, Linton & Company and do not necessarily reflect the views of the Reference Group or its recommendations to the Commission.

TABLE OF CONTENTS

Page

PART I - PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTER 1 - INTRODUCTION 1

1.1 GENERAL 1

CHAPTER 2 - DEFINITIONS AND METHODOLOGY 4

2.1 GENERAL 4

2.2 LAND USE ACTIVITIES 4

2.3 CONTROL COMPONENTS 5

2.4 METHODOLOGY 6

CHAPTER 3 - INSTITUTIONAL AND LEGISLATIVE FRAMEWORK 9

3.1 GENERAL 9

3.2 INSTITUTIONAL STRUCTURE 9

3.2.1 State 10

3.2.2 Local Governments 12

3.3 LEGISLATIVE FRAMEWORK 13

3.3.1 Urban Areas 13

3.3.2 Shoreline Landfilling 20

3.3.3 Recreation 23

3.3.4 Lakeshore and Riverbank Erosion 23

CHAPTER 4 - FRAMEWORK ANALYSIS 27

4.1 GENERAL 27

4.2 ANALYSIS 27

4.2.1 Stormwater Runoff 27

4.2.2 Lakeshore and Riverbank Erosion 27

PART II - SUMMARIES OF LEGISLATION

CHAPTER 5 - RELEVANT LEGISLATION 28

5.1 GENERAL 28

BIBLIOGRAPHY 45

CHAPTER 1

INTRODUCTION

1.1 GENERAL

On April 15, 1972, the governments of Canada and the United States signed the Great Lakes Water Quality Agreement. As an integral part of this agreement, the International Joint Commission was asked to establish a Reference Group to study pollution in the Great Lakes system from agriculture, forestry, and other land uses.

Subsequently, the eighteen-member Pollution From Land Use Activities Reference Group was formed with an equal number of Canadian and United States members to answer the following three questions:

(1) Are the boundary waters of the Great Lakes System being polluted by land drainage (including ground and surface runoff and sediments) from agriculture, forestry, urban and industrial land development, recreational and park land development, utility and transportation systems and natural sources?

(2) If the answer to the foregoing question is in the affirmative, to what extent, by what causes, and in what localities is the pollution taking place?

(3) If the Commission should find that pollution of the character just referred to is taking place, what remedial measures would, in its judgement, be most practicable; and what would be the probable cost thereof?

In order to provide an adequate response to this last question, the Reference Group proposed a series of studies to define all those remedial measures pertinent to the solution of the problem areas identified.

This study is specifically addressed to the review and the evaluation of the existing legislative/regulatory framework available for controlling pollution from land use activities.

Canada and the United States are jointly undertaking this study. They have asked the study participants to provide information on the following tasks:

(1) Describe the content of the existing legislation/regulation framework available at each level of government (Federal, State, Special Purpose District, County and Municipal) for controlling the non-point discharges of sediments, nutrients, pesticides, and chemicals associated with the following land use categories:

		Priority Rating
(a)	Urban Areas	H
(b)	Transportation Corridors	M
(c)	Extractive Operations	L
(d)	Agriculture	H
(e)	Recreational Areas	L
(f)	Forested Areas	L
(g)	Liquid, Solid and Deepwell Disposal Areas	H
(h)	Shoreline Landfilling Activities	M
(i)	Lakeshore and Riverbank Erosion	L

Special reference should be made to the provisions made at the local level for controlling these potential diffuse sources of pollution.

(2) Describe the extent of the regulatory power, the commitment to develop and undertake programs and the degree of enforcement practiced at each of the specified levels of government relative to pollution from land use activities.

(3) Identify other relevant government and non-governmental programs and policies which would have an indirect bearing on the control of pollution from land use activities (i.e., sediments, nutrients, pesticides and chemicals).

(4) Identify those land use categories for which the four major pollutants (sediments, nutrients, pesticides and chemicals) are least controlled.

(5) In terms of the present jurisdictional framework (i.e., State and County), outline what possibilities for future action are available to each level of government. This would include an analysis of the constitutional limitations operating at each level of government and the potential of the existing legislative/regulatory framework for controlling non-point sources of pollution.

(6) Describe the alternatives for the future evolution of this legislative/regulatory framework based on discussions with those persons actively working with the present framework.

(7) Coordination between the Canadian contractors and the United States to develop a standardized format for comparing the legislative and regulatory approaches taken in each country.

This report addresses these tasks and presents the findings of the legislative review and interviews with State and local officials.

The part is divided into four chapters. Chapter 1 is this "Introduction." Chapter 2, "Definitions and Methodology," presents the definitions of land use activities for which control is needed, the types of pollution controls that are the components of a legislative framework and the methodology for the analysis. Chapter 3, "Institutional and Legislative Framework," presents the legislative framework for non-point pollution control and the institutional structure for each state. This Chapter includes a discussion of how each land use activity is currently controlled, how much it contributes to non-point source pollution, and the strengths and weaknesses of the current legislation. The final Chapter, "Future Actions," identifies actions that may be taken in the future. The comparative analysis of the different states in the Great Lakes Basin will identify alternatives that could be implemented through legislative changes.

CHAPTER 2

DEFINITIONS AND METHODOLOGY

2.1 GENERAL

This Chapter is divided into three sections, which present the definitions of the land use activities, the control components, and a summary of the methodology used to develop this report. The land use activities used are those that PLUARG has found may cause non-point pollution and are presented in priority of concern as identified by PLUARG. The control components are compatible with those used in the legislative report for the Canadian side of the Great Lakes Basin. The methodology is divided into three steps -- data collection, analysis, and evaluation and identification of future actions -- with the component parts of each step summarized.

2.2 LAND USE ACTIVITIES

The Reference Group has identified the land use activities which may contribute to pollution. The activities are grouped into land use categories, and the priority of concern is identified.[1]

(1) Urban Areas -- high priority. This category has two land use activities -- site runoff from construction activities and stormwater runoff. These areas are the densely settled, built-up areas generally including those economic activities requiring the concentration of firms and the work force.

(2) Agriculture -- high priority. This category has five land use activities -- application of pesticides, application of fertilizers, feedlot operations, erosion from general farm practices, and drainage. An agricultural area is defined as those lands including structures actively committed to the production of food and fibre.

(3) Liquid, Solid and Deepwell Waste Disposal Areas -- high priority. There are three land use activities -- solid waste, liquid sludge, and private sewage disposal. This category includes those areas used for landfills, land application of wastewater effluents and the injecting of wastes into subsurface geological formations.

(4) Transportation Corridors -- medium priority. One land use activity is considered -- runoff from construction, maintenance and use of transportation facilities. These facilities include highways and roads, airports, railroads, and utility corridors.

(5) Shoreline Landfilling Activities -- medium priority. This category has two land use activities -- land or construction excavations and dredging. There is no definition as to the distance from the water's edge in which controls should be enforced.

(6) Extractive Operations -- low priority. Three land use activities have been identified -- pits and quarries, mining, and the disposal of brines from oil and gas operations. The land areas covered are those taken by the removal and primary processing of materials from either bedrock or surface deposits.

(7) Recreation Areas -- low priority. Three land use activities have been identified -- runoff related to specific recreational activities, pesticide use and private waste disposal. This category includes public and private lands designated for recreational use.

(8) Forested Areas -- low priority. Four land use activities have been identified as sources of pollution -- timber production, woodland grazing, wildlife management and recreation.

2.3 CONTROL COMPONENTS

Research by the contractor and the Canadian contractors has identified six control components which can be applied in different combinations and to different degrees in controlling land use activities which have the potential of causing non-point pollution in a specific area. The components identified are:[2]

PC - Direct Pollution Control -- where a specific activity is controlled by law or regulation through preventive or reactive means. Preventive control is where a proposed or continuing activity must receive approval from a designated agency prior to the implementation, or at periodic intervals. Reactive control is where an activity may proceed without prior approval, but is subject to control retroactivity if standards are violated. An example of a preventive control is requiring a permit for activities within a specific distance from a lake or stream. A reactive control is the fining of a governmental highway department for a fish kill that resulted from inadequate control of runoff from a road construction project.

P - Planning -- where a plan of a specific activity must be submitted prior to implementation of the activity, or where a local or State agency develops a general or specific plan, including water quality considerations, which must be followed in approving and/or implementing specific actions. Examples of this would be a site plan showing the stormwater and site runoff control measures to be employed during and after development and a comprehensive land use plan for a locality.

OS - Indirect Control -- where an act or regulation has been implemented for another major purpose, but will have an indirect impact on controlling non-point pollution. An example of this type of control is the review and licensing of sanitary landfill operators to insure that the landfill does not become a health hazard.

NS - Non-Statutory Control -- programs that are not in direct response to a legislative mandate, but which are designed to reduce pollution. This includes educational and citizen participation programs and technical assistance provided to various client groups. An example is the soil conservation courses of an agricultural extension agent or a State agency assisting a locality in developing a comprehensive plan.

MP - Management of Public Lands -- the guidelines adopted by a public agency on how it will maintain the lands that it owns. This also includes how the agency views its responsibilities in responding to the controls of other public agencies. An example is the method of right-of-way maintenance practiced by a department of transportation and its response to sedimentation controls imposed by a pollution control agency.

F - Fiscal Incentives or Disincentives -- where public agencies provide monetary incentives to other public agencies or private groups or individuals to assist in the implementation of pollution abatement programs. A disincentive is where costs are imposed without assistance or an activity requires payment of an additional tax. An example of an incentive is the agricultural cost sharing program, while a disincentive is the higher taxing of an individual who does not provide adequate drainage on his land.

2.4 METHODOLOGY

The methodology used in preparing this report is designed to address three major objectives:

- first, to present the salient points of the legislation that control non-point sources of pollution;

- second, to present a summary of the institutional structure in the State and identify the key actors in controlling pollution; and

- third, to provide an evaluation of the legislation and its implementation and to identify future actions which are anticipated at this time.

The meeting of these objectives is accomplished through a multi-phased process. An Initial Inventory of Legislation and a questionnaire requesting information on a magnitude of problems and the degree of implementation were prepared and sent to appropriate State and, where necessary, local officials. The answers, comments and additional information received form the basis for writing a description of the institutional structure, problems and current activities of each State and the Federal government. These descriptions provide the basis for the development of evaluation questions which are used in the interviews of Federal, State or local officials.

Interviews were conducted with the State PLUARG representative and additional State and local officials involved in implementing and enforcing the legislation and regulations. Information from the interviews is used to update the previously written drafts and to evaluate the legislative framework. The resulting Draft Report is reviewed by GLBC, the people interviewed, and PLUARG Task A Committee members to verify data and the analysis. The comments received are incorporated into a Final Report.

The remaining sections of this report are organized so the objectives are clearly addressed. Chapter 3 is a summary of the institutional structure and legislative framework. The legislative framework is divided into the land use activities with each discussed in terms of magnitude of problem, current activities, and evaluation of those activities. Chapter 4 is an analysis of the legislative framework, and the conclusions drawn by the contractor.

The second half of the report, Part II, is an identification of the salient point of the legislation that controls non-point sources of pollution. It is the objective of this part to provide the user with additional information on the specific pieces of legislation so that the transfer of the salient points between political jurisdictions can be facilitated.

FOOTNOTES -- CHAPTER 2

[1] International Reference Group on Great Lakes Pollution from Land Use Activities, Detailed Study Plan Supplement, August 1976, International Joint Commission, p. 8. (Also see "Summary Review of Pollution from Land Use Activities" for a more detailed description.)

[2] Castrilli, J.F., Pollution from Land Use Activities Reference Group: Legislative Study Interim Report No. 1, Urban Areas, Canadian Environmental Law Research Foundation, May 1976. Supplemented a Task A Committee meeting June 15, 1977, Detroit, Michigan, and letter of July 26, 1977 by G. Bangay, Coordinator, Land Drainage Studies, Environmental Protection Service, Canada Center for Inland Waters, Burlington, Ontario.

CHAPTER 3

INSTITUTIONAL AND LEGISLATIVE FRAMEWORK

3.1 GENERAL

This Chapter presents the institutional structure and legislative framework for nonpoint pollution control in the State of Illinois. Section 3.2 identifies the institutions involved in nonpoint pollution control and presents brief descriptions of the key institutions. Section 3.3 presents the legislative framework in matrix form, followed by a discussion of the magnitude of the problem, current controls, and evaluation of the controls and their implementation.

Due to the limited shoreline the State of Illinois has on Lake Michigan, the scope of the analysis of legislation in the State of Illinois has been reduced from that presented in the previous Chapter. For Illinois, the following land use activities are analyzed:

- Urban Stormwater Runoff
- Dredging
- Land or Construction Excavations on the Shoreline
- Water-related Recreation Activities
- Lakeshore and Riverbank Erosion

3.2 INSTITUTIONAL STRUCTURE

Different State and substate agencies share pollution control responsibilities in Illinois. Table I presents those agencies for each level of government. An asterisk indicates the key governmental units.

TABLE I

AGENCIES WITH NONPOINT POLLUTION CONTROL RESPONSIBILITIES

STATE	SUBSTATE
*Water Resources Division, Illinois Department of Transportation	*Counties
*Illinois Environmental Protection Agency	*Cities
Illinois Department of Conservation	*Villages
Illinois Department of Local Government Affairs	Towns
Institute for Environmental Quality	Regional Planning Commissions
*Illinois Pollution Control Board	*Metropolitan Sanitary District of Greater Chicago

Descriptions of the key State and substate governmental units follow:

3.2.1 State

As presented in Table I, there are three major State agencies with authority to control land use activities that impact water quality in the State of Illinois. These agencies are the Illinois Environmental Protection Agency, the Division of Water Resources of the Illinois Department of Transportation, and the Illinois Pollution Control Board This section presents the powers of each of these agencies.

3.2.1.1 Illinois Environmental Protection Agency

The Illinois Environmental Protection Agency(IEPA) has been given authority through the Illinois Environmental Protection Act to establish a unified statewide program to restore, protect, and enhance the quality of the environment and to assure that adverse effects upon the environment are fully considered and borne by those who cause them. To carry out this mandate, IEPA is responsible for the collection and dissemination of information to conduct a program of continuing surveillance and periodic inspection of actual or potential contaminant sources of public water and refuse disposal sites. The Agency is also responsible for the administration of permit and certification programs designed to control water pollution, and has the authority to require the submission of plans and specifications from any applicant for a permit and to enforce the rules and regulations promulgated by the Illinois Pollution Control Board.[1]

For the land use activities addressed in this report, the IEPA has prime responsibility for stormwater runoff and the control of private sewage disposal systems.

3.2.1.2 Division of Water Resources, Illinois Department of Transportation

The Division of Water Resources is divided into five Bureaus:

- Bureau of Program Development
- Bureau of Project Development
- Bureau of Project Implementation
- Bureau of Resource Regulation
- Bureau of Administrative Services

The prime water quality responsibility of the Division of Water Resources is to control the erection, placement and construction of facilities in and along the public waters, and to supervise the leasing and management of properties under the jurisdiction of the Division. In addition, the Division is responsible, from an engineering standpoint, for investigation of watershed surveys and planning for optimum water and related land resource development.[2]

The Bureau of Resource Regulation is responsible for the control of water related construction and the allocation of waters from Lake Michigan. The Bureau of Program Development provides planning, programming and local assistance related to present and future water problems.

3.2.1.3 Institute for Environmental Quality

The Institute for Environmental Quality was created by the Illinois Environmental Protection Act. This organization is responsible for providing support to the Illinois Pollution Control Board and IEPA in the form of applied research, relevant data, and policy recommendations. The Institute also functions as the environmental education coordinator for the State. A comprehensive library of environmental materials is maintained by the Institute for public use.

3.2.1.4 Pollution Control Board

The Pollution Control Board consists of five full-time members appointed to staggered, three-year terms by the Governor. The Board establishes regulations (including water quality standards), acts as the court of original jurisdiction in the enforcement of the Act and Board Regulations, and grants variances of limited duration from provisions of the Act or Regulations when justified.

The regulations adopted by the Board set forth the primary requirements to be met in order that the state's environmental objectives be achieved.

More specifically, upon a formal demonstration of arbitrary or unreasonable hardship, the Illinois Pollution Control Board may grant a variance from the limitations of the Environmental Protection Act or Board regulations. In cases where an NPDES permit is involved, variances may be for as long as five years; in all other cases a one-year limit is placed on the term of the variance. Reporting requirements and performance bonds are frequently made conditions of a variance. Obviously, the Board may not grant a variance in conflict with federal law.

It should be noted that all important Board actions occur at public meetings and usually are based on records of one or more public hearings. The Environmental Register is published regularly to inform the public of Board actions and matters pending before the Board. Thus, the vital policy-making role of the Pollution Control Board is constantly exposed to public scrutiny and input, and this public participation profoundly affects the conduct of the entire water pollution program, not only by the Board, but also by the Environmental Protection Agency which is bound by the regulatory, enforcement, and variance actions of the Board.[3]

3.2.2 Local Governments

The major local governments which control land use activities are counties, cities and villages. Counties are given powers in the Illinois Constitution which are defined in statutes passed by the General Assembly.

The Illinois Constitution gives home rule powers to counties with chief executive officers elected at large and municipalities having populations of more than 25,000, or who elect by referendum to become home rule units. A home rule government is given power to "exercise any power and perform any function pertaining to its government and affairs including, but not limited to, the power to regulate for the protection of the public health, safety, morals and welfare; to license; to tax; and to incur debt."[4]

3.2.3 Special Purpose Districts

3.2.3.1 Metropolitan Sanitary District of Greater Chicago

The Metropolitan Sanitary District of Greater Chicago serves an area of approximately 866 square miles. This area lies totally within Cook County, Illinois. The District collects, treats, and disposes of the wastewater from 124 municipalities, and has a population of 5.5 million people. The area is highly urbanized and industrialized. The District treats a non-domestic wastewater load equivalent by strength to approximately 4.5 million people, and a total domestic and non-domestic wastewater loading of approximately 10 million population equivalents. The District has a Lake Michigan shoreline of approximately 35 miles in length. In addition, there are over 200 miles of major streams within the MSDGC.

The District was created in 1889, and in order to protect the area's prize water supply, Lake Michigan, the flow of the Chicago and Calumet River systems were reversed. As a consequence, these waterways are presently tributary to the Illinois River system. Approximately 52 miles of canals were constructed (North Shore, Main, and Cal-Sag channels) and connected to an improved river system to form a waterway system of over 80 miles in length, extending from Lake Michigan to Lockport, Illinois.

The District is participating in the Areawide Waste Treatment Management Study (208) for the six county Northeastern Illinois area. The Northeastern Illinois Planning Commission is the designated planning agency for this study. NIPC has contracted the District to perform a major portion of the water quality analysis and additional related work.

The District's Facilities Planning Study has been reviewed by the United States Environmental Protection Agency (USEPA) and the Illinois Environmental Protection Agency (IEPA). The FPS has been substantially approved by those agencies and the District is presently implementing the key elements of its plans through detailed planning, design and construction.[5]

It is to be pointed out that the District has a policy, which it is implementing, of no discharge of pollutants to Lake Michigan. This includes nonpoint pollutants. The District's "Lakefront Outfall Study" is an example of this involvement.

3.3. LEGISLATIVE FRAMEWORK

This section outlines the legislative framework of laws pertaining to water quality in the State of Illinois and discusses how these laws are implemented by the various responsible agencies. This framework is presented in summary form in Table II, "Summary of Legislative Framework." A summary of the evaluation of the degree of implementation is presented in Table III, "Summary of Analysis." The following subsections present in more detail the legislative framework and the evaluation as summarized in the two tables. Each table is accompanied by a list of notes identifying the different symbols used and clarifying comments.

3.3.1 Urban Areas

3.3.1.1 Urban Stormwater Runoff

Magnitude of the Problem and Current Activity

Pollution from stormwater runoff normally occurs in one of two ways: (1) where the stormwater is combined with raw sewage in a combined sewer system, and excess flow exceeds the capacity of the treatment plant or sewer system resulting in the combined raw sewage and stormwater bypassing the treatment plant and going directly to the receiving stream; or (2) where the stormwater is separated from the sewer system but goes directly to the stream without any kind of treatment. The combined sewer problem has been defined as a point source problem and will not be discussed hre. The separated system is currently defined as a nonpoint pollution problem, since stormwater begins as nonpoint runoff and only gains point source characteristics after it has been collected in the storm system. There is some transport of sheet runoff to Lake Michigan from urban areas.

Stormwater runoff also enters coastal waters from shorelands adjacent to them from the ravines and tributaries of Lake Michigan. None of the tributaries or ravines are served by municipal stormwater sewer systems. Whereby the stormwater runoff entering a ravine is collected and sent to a municipal wastewater treatment plant for treatment. These tributaries and ravines are the main drainage areas east of the watershed divide which runs one mile west of the shoreline. These ravines and tributaries serve as a major conveyance system of urban stormwater runoff to the Lake, but there is presently no physical data or evidence to document that these ravine discharges represent a significant impact on Lake Michigan. Apparently, much of the sediment and suspended organic matter settles in the bottom of the ravine and does not reach the Lake. In Cook County, however, 539 outfalls discharging stormwater exclusively into the Lake have been identified. In recognition of the pollutional impact on the Lake as a result of these discharges, the Metropolitan Sanitary District of the City of Chicago in its 1974 report, "Lakefront Outfall Study," recommended a plan for intercepting a majority of these identified outfalls. A system of local collection sewers, conveyance tunnels, and storage facilities is envisioned which will transmit the stormwater to treatment facilities and then to the Illinois River System. Implementation of this system is proposed in conjuntion with the Metropolitan Sanitary District's Tunnel and Reservoir Plan.[6]

Evaluation

The primary source of pollution in Lake Michigan from stormwater runoff comes from outfalls of stormwater collection systems depositing polluted stormwater directly into the Lake. The impact of tributary and ravines runoff into the Lake is not known at this time but indications are that the impacts are very minor and temporary. It has been proposed that a major interceptor system will eliminate the majority of the outfalls and significantly reduce the impact of stormwater runoff on the lake. The implementation of this Diagram is currently under review and discussion by the public and appropriate State and federal officials.[7]

SUMMARY OF LEGISLATION

ILLINOIS

TABLE II

CHAPTER	LAND USE CATEGORY										IMPLEMENTING RESPONSIBILITY				TYPE OF CONTROL						COMMENTS/IMPLEMENTING AGENCY
	Urban	Agriculture	Liquid/Solid Waste	Transportation	Shoreline Landfill	Extractive Operations	Recreation	Lakes & Riverbanks	Forest	Regulations	State	County	Municipality	Special District	Direct (PC)	Planning (P)	Indirect (OS)	Non-Statutory (NS)	Management (MP)	Fiscal (F)	
19.73, State Jurisdiction over Public Bodies of Water					X		X			NA	X				X				X		Division of Water Resources, Department of Transportation
19.150, Title to Submerged Lands					X		X	X		NA	X				X				X		Attorney General
19.54, Approval of Subdivision Boundaries	X				X					NA	X				X	X	X				Division of Water Resources, Department of Transportation
115.13, Approval of Plats for Lands Abutting Public Waters	X				X			X		NA	X				X	X					Division of Water Resources, Department of Transportation
19.65, Structures in Lake Michigan					X		X	X		NA	X				X	X					Division of Water Resources, Department of Transportation
111½.1011, Control of Water Pollution	X				X		X	X		NA	X				X	X					Illinois Environmental Protection Agency
127.63b 14.14, General Planning Authority	X				X		X	X		NA	X	X	X			X					Illinois Department of Local Government Affairs
111½.1004, Environmental Protection: Technical Assistance	X				X			X		NA	X				X	X	X				Illinois Environmental Protection Agency
111½.1006 Institute for Environmental Quality: Tech. Asst.	X				X		X	X		NA	X				X	X	X				Illinois Institute for Environmental Quality
Ill. Const., Art. VII, Sec. 1-5, Gen., Local Government Powers	X				X		X	X		NA		X	X	X	X	X	X				Local Governments
19.65f, Construction Permits in Define Flood Plans					X					NA	X				X	X					
Illinois Constitution, Article VII, Sections 6-9, Local Home Rules	X				X		X	X		NA		X	X		X	X	X				Local Governments
Powers																					
Ill. Const., Art. XI, Sec. 1-2, Environmental Article	X				X		X	X		NA	X							X			
19.65a. Agreements for withdrawal of Mate. fm. Bed of the Lake					X		X			NA	X				X						
Proposed Coastal Resources Management Act					X					NA	X	X	X		X	X	X				Division of Water Resources, Department of Transportation

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NOTES -- TABLE II

1. Land Use Categories -- See Chapter 2, for definitions and identification of the land use activities in each category. An X indicates that the land use category is addressed by the Act. It does not indicate the adequacy of authority or degree of implementation. See page reference for discussion.

2. Regulations Adopted -- Have regulations been adopted to implement the legislation? Symbols refer to:

   Yes -- Regulations have been adopted

   No -- Regulations have not been adopted

   NA -- Information not available or in case of Non-Statutory Control, not applicable.

3. Implementing Responsibility -- The key agencies and/or levels of government that have responsibilities in implementing the legislation. Specific agencies, municipalities and/or special districts are identified in the comments section.

4. Type of Control -- See Chapter 2, Section 3, for definitions of each type of control.

5. An X indicates that the category is addressed by the act identified, it does not identify the adequacy or degree of implementation.

ILLINOIS   TABLE III   Summary of Analysis

LAND USE ACTIVITY	Magnitude of the Problem[1]	Current Activity[2]	Staffing[3]	Financing[4]	Likely Future Activity[5]	COMMENTS
Urban						
Site Runoff						Activity not reviewed for Illinois
Stormwater Runoff	M	EP	NI	NI	EP	Developing comprehensive collection and treatment system
Agriculture						
Pesticides						Activity not reviewed for Illinois
Fertilizers						Activity not reviewed for Illinois
Feedlot Operations						Activity not reviewed for Illinois
Erosion from Farm Practices						Activity not reviewed for Illinois
Drainage						Activity not reviewed for Illinois
Liquid, Solid, Deepwell Disposal						
Solid Waste						Activity not reviewed for Illinois
Liquid Sewage Sludge						Activity not reviewed for Illinois
Private Sewage Disposal						Activity not reviewed for Illinois
Transportation Corridors						
Highway and Road Runoff						Activity not reviewed for Illinois
Railroad Runoff						Activity not reviewed for Illinois
Airport Runoff						Activity not reviewed for Illinois
Utility Rights-of-Way Runoff						Activity not reviewed for Illinois
Shoreland Landfilling						
Land or Construction Excavation	L	EP	NI	NI	L,R	
Dredging	L	EP	O	O	EP	
Extractive Operations						
Pits and Quarries						Activity not reviewed for Illinois
Mining						Activity not reviewed for Illinois
Brines from Oil and Gas						Activity not reviewed for Illinois
Recreation						
Runoff from Specific Activities	L	EP	NI	NI	NC	
Pesticide Use	L	NA	NI	NI	NA	
Private Sewage Disposal	L	EP	NI	NI	NC	Sewer improvements will eliminate many septic systems
Lakeshore and Riverbank Erosion						
Erosion	M	L	O	O	L,R	
Forest						
Timber Production						Activity not reviewed for Illinois
Woodland Grazing						Activity not reviewed for Illinois
Wildlife Management						Activity not reviewed for Illinois
Recreation						Activity not reviewed for Illinois

NOTES FOR TABLE III

1. Magnitude of the Problem -- The degree that the land use activity is reported to be a problem and/or perceived to be a problem by local or State officials. Symbols refer to:

   S -- serious

   M -- moderate

   L -- low

   UK -- yet to be determined

   NI -- information not available.

2. Current Activity -- The land use activities where current activities are focused primarily at the State level. Activities of major emphasis are noted with asterisks (I). The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of incentive programs

   EP -- enforcement of control programs

   TR -- technical research is needed to determine the type of controls needed, if any

   NO -- no action

   NA -- not applicable

   NI -- information not available.

3. Staffing - The adequacy of staff assigned to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too many staff resources applied

   0 -- an adequate amount of staff resources applied

   - -- an inadequate amount of staff resources applied

   NA -- not applicable

   NI -- information not available

4. Financing -- The adequacy of the financing appropriated to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too much financial assistance

   0 -- adequate financial assistance

   - -- inadequate financial assistance

   NA -- not applicable

   NI -- information not available.

5. Likely Future Activity -- The land use activities where there is likely to be future activity primarily at the State level. The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of new or improved incentive programs

   EP -- enforcement of new or improvement of control programs

   NO -- no action

   NA -- not applicable

   NI -- information not available.

3.3.2 Shoreline Landfilling

3.3.2.1 Dredging

Magnitude of the Problem

Dredging is not a major cause of pollution in Lake Michigan. Currently, the State allows material that has been dredged to be disposed of in one of two ways. 'If it can be shown through sediment analysis that the material to be dredged is of a suitable size for beach nourishment and is not polluted, then that material may be placed along the shoreline to supplement the natural littoral drift sediments. If the material to be dredged is found to be polluted, per IEPA regulations, then the spoil must be disposed of in an approved dredge disposal site.'

Current Activities

Prior to any dredging activity, a permit must be obtained from the U.S. Army Corps of Engineers and the Division of Water Resources of the Illinois Department of Transportation. The Division of Water Resources will not issue a permit until it has received approval to do so from the Illinois Environmental Protection Agency, the U.S. Army Corps of Engineers, and the Illinois Department of Conservation. Without the signoff of these agencies, the Division of Water Resources will not issue a permit in the removal of resources from the bed of Lake Michigan.

There is coordination, although not a specific written agreement, between the Division of Water Resources and the Corps of Engineers for their dual permitting program. This coordination allows the Division of Water Resources to be the lead agency in obtaining Corps approval of any permit prior to issuance by the Division of Water Resources.[8]

In addition to the permitting program, the State of Illinois owns the Lake Michigan bottomland and waters, which gives the Division of Water Resources all the power related to ownership of land, along with the permitting program, to control dredging activities.[9]

Non-polluted spoil has also been used for beach nourishment in selected locations. This nourishment is required because structures built out into the Lake have reduced the littoral drift along the shore and increased downdrift erosion causing beach erosion problems.[10]

Evaluation

The permitting program on dredging and soil disposal is working very well according to Illinois officials. They do not feel that the staffing or financing of the program is inadequate; however, they do feel that additional technical research on bed configuration, littoral current patterns, storm and wave action, and fluctuating Lake levels is necessary not only in the design of effective shore protection structures, but in the determination of the movement of materials along the bottom. Such information should allow them to better identify problems and take preventive measures so that dredging activities can be reduced.[11]

3.3.2.2 Land and Construction Excavations

Magnitude of the Problem and Current Activities

Construction and excavation activities along the Illinois coastline are very few, due to the almost complete development of the shoreline. Any construction that does take place along the shoreline or in the waters such as bulkheads, piers, and erosion control structures requires a permit from the Division of Water Resources of the Illinois Department of Transportation.

The Illinois Coastal Zone Management Program has been designed to preserve, protect, develop, and enhance the resources of Lake Michigan and the Illinois shorelands. This is accomplished through the focusing of the technical and financial resources and the planning, management, and regulatory activities of all involved governments along Lake Michigan and the Illinois shorelands. This focus is to organize these units of government into a cohesive management system. The program is developing a partnership of State and municipal governments to achieve a focus for coastal problem-solving and resource protection. Municipal governments will be required to develop a municipal management program meeting specific requirements developed by the State. Upon the meeting of these requirements, the State will certify the municipal governments and provide financial assistance to the municipalities for developing and maintaining their coastal management responsibilities.

Part of the program that the municipalities must adopt deals with regulation of the coastal zone. The regulations fall into three different types of land modification activities: (1) construction activities and stormwater and sediment control; (2) erosion hazard areas; and (3) sheltered coastal flood plains, where applicable.

The proposed guidelines for construction activities in stormwater and sediment control have been divided into two categories--construction management and site design. Construction management includes the development by a municipality of a set of regulations responsive to the following criteria:

- Where necessary, cut faces and slopes should be protected during construction;
- Storage of materials under tree crowns and in watercourses and flood plains should be controlled;
- Where possible, one year of construction or less should be used per construction phase;
- Where necessary, sediment basins, diversions, grade stabilization structures, and other sediment control measures should be used during each construction phase;
- Devegetation should be minimized and revegetation undertaken as quickly as possible;
- The area and time of exposed soil should be minimized through the use of temporary vegetation or mulching and other techniques;
- Standards and specifications for soil erosion and sediment control in northeastern Illinois shall serve as general guidelines.

The criteria related to site design are:

- Cut and fill and permanent alteration of terrain should be minimized;
- Permanent devegetation should be minimized;
- Provision should be made for the storage and controlled release of runoff.[12]

This program is currently proposed through the Illinois Coastal Zone Resource Management Act, which is under consideration by the Illinois General Assembly. This Act is a controversial one, and passage is not assured.[13] Regulations pertaining to site design and construction and land modifications activities are dependent on passage of the Illinois Coastal Resources Management Act.

Evaluation

The current permit of construction activity on the shoreline will be greatly strengthened by the passage of the Illinois Coastal Resources Management Act. This Act will develop the desired State and local partnership and insure maximum control of construction activities along the shoreline.

3.3.3 Recreation

Magnitude of the Problem

This category includes pesticide use which is not applicable to water related recreational activities. Also included are private sewage systems, which in water activities would be on-board sewage disposal systems from boating activities, which are defined by the EPA as point source water pollution problems. The third land use activity, that of runoff that results from specific types of facilities, has some localized pollution problems. Most of these problems are related to the heavy use of the facilities. There is currently a need for additional recreational boating facilities, harbors of refuge, pier fishing facilities, and better transportation access and parking facilities for the shoreline. Currently, there is a State park and numerous municipality-owned recreational areas along the shoreline. In general, emphasis needs to be placed on improving the operation and maintenance of these existing facilities to insure their maximum utilization.[14]

In addition, there is considerable downdrift erosion along the beaches, which requires the continual nourishment of those beaches.

There are some private sewage disposal systems along the lakefront, but the proposed sewerage improvements should eliminate almost all of these systems.

Evaluation

Recreational activities and development related to them have a very minimal impact on Illinois' lakeshore. The problems that do exist are localized in nature and generally can be corrected through increased emphasis on the operation and maintenance of recreational facilities. The implementation funding that is available through the Federal Coastal Zone Management Program will be used to improve the operation and maintenance of the existing recreation facilities.[15]

3.3.4 Lakeshore and Riverbank Erosion

Magnitude of the Problem

Different sections of the Illinois shoreline have very severe erosion problems. A survey showed that between 1972 and 1975, over $25,000,000 (includes $10,000,000 for new construction of shoreline structures) worth of damage and repairs to structures along the shoreline was due to shoreline erosion.

This erosion results from bluff instability, which is caused by wave attack, surface runoff, groundwater flow, and loss of vegetation. The destruction and deflection of the littoral drift caused by major shoreline structures results in increased downdrift shoreline erosion. To combat these natural problems, erosion protection structures have been built in various locations along the shore. Some of these structures are improperly designed and maintained, which results in many cases in the aggravation rather than the mitigation of shoreline erosion damage. This design problem is the result of a lack of sufficient public technical assistance for the design, location and maintenance of private and public erosion control structures.

Current Activities

The Illinois Coastal Zone Management Program has taken a comprehensive, detailed look at the shoreline erosion problems of Illinois. They have identified the specific areas of lakeshore where there are severe problems and have projected erosion rates for the whole lakeshore to identify areas where serious erosion is likely to occur in the future. From this analysis, they have developed a program designed to minimize property damage from shore erosion and flooding. The objectives of this program are as follows:

- To minimize property damage from shore erosion and flooding and to develop a coordinated and comprehensive shoreline Protection System and bluff Stabilization Program.
- To protect, enhance, and restore Lake Michigan water quality to the maximum extent practicable.
- To protect, enhance, and restore the aquatic and terrestrial habitat of the Illinois Coastal Zone.
- To enhance opportunities for public recreational activity along the Illinois shore.
- To enhance opportunities for the preservation and development of coastal-dependent commercial and industrial uses contributing to the economic well-being of the State.
- To protect those common-law and statutory public and private rights in the Coastal Zone, and to conduct a continuing program for the apportionment of water from Lake Michigan among users.
- To strengthen comprehensive and coordinated planning and decision-making by all levels of government in the Coastal Zone.[16]

The objectives of the Coastal Zone Management Program in attempting to eliminate shoreline erosion have been developed into the proposed Illinois Coastal Zone Management Act, which is currently under consideration by the Illinois General Assembly.

Evaluation

Shoreline erosion is a serious problem for the Illinois shoreline, and the Coastal Zone Management Program has done the detailed, in-depth study necessary to develop appropriate legislation to control man's activities which contribute to this erosion problem. With the passage of the Illinois Coastal Zone Management Act and the additional funding sources that are available to implement the program through the Federal Coastal Zone Management Program, the erosion along the shoreline should be greatly reduced in the future.

While the emphasis of the Coastal Zone Program is on damage to structures, the reduction in erosion of the shoreline to prevent structural damage will also have the indirect effect of reducing sediments from the erosion, and therefore will improve water quality.

FOOTNOTES - CHAPTER 3

1. IEPA law.

2. Illinois Department of Transportation, Chapter 21 Departmental Orders, Page 21-1, Rivers, Lakes and Streams Act of 1911 as amended, Chapter 19, Paragraph 65, Illinois Revised Statutes.

3. Illinois Environmental Protection Agency State of Illinois Environmental Protection Agency: Revised Continuing Planning Planning Process for Water Quality Standards Implementation - Volume 1 IEPA, Chicago, Illinois, March 3, 1976, pgs. 3-4.

4. State of Illinois, Illinois Constitution, 1970 Article VII, Sections 6-9 inclusive.

5. Metropolitan Sanitary District of Greater Chicago. Facilities Planning Study: MSDGC Update Supplement and Summary, May 1977. MSDGC, Chicago, Illinois, May, 1977.

6. Division of Water Resources, Illinois Coastal Zone Management Program: Preliminary Draft, Illinois Department of Transportation, Chicago, Illinois. November, 1976.

7. Northeastern Illinois Planning Commission, Staff Paper No. 11: Lake Michigan Water Quality Trends and Monitoring Programs in Illinois Waters, NIPC, Chicago, Illinois. December, 1976.

8. Interview, Mr. Dan Injerd, Division of Water Resources, Illinois Department of Transportation, Chicago, Illinois. October, 1977.

9. Ibid.

10. Op. Cit. Division of Water Resources, Page 40.

11. Ibid. Page 41.

12. Division of Water Resources Draft Paper-Illinois Coastal Zone Management Program: Coastal Management Policies and Implementation Activities. Department of Transportation, Chicago, Illinois. September, 1977.

13. Op. Cit. Interview, Dan Injerd.

14. Ibid.

15. Ibid.

16. Op. Cit. Division of Water Resources.

CHAPTER 4

FRAMEWORK ANALYSIS

4.1. GENERAL

This Chapter presents the Contractor's analysis of the legislative framework for the State of Illinois. The analysis, based on the evaluations of land use activities presented in Chapter 3, identifies the strengths and weaknesses in the framework and the future actions which could correct the weaknesses.

4.2 ANALYSIS

4.2.1 Stormwater Runoff

Currently, stormwater runoff from outfalls is a water quality problem in Lake Michigan. A proposed stormwater control program should eliminate the majority of the outfalls. In addition, the stormwater study of the 208 Program should provide additional technical information and a management plan to control stormwater runoff. The combination of these two programs should adequately control stormwater pollution problems.

4.2.2 Lakeshore and Riverbank Erosion

Currently, lakeshore erosion is a moderate problem along the Lake Michigan shoreline. The Coastal Zone Management Program has completed a detailed analysis of the cause and effect of the problem, and has proposed the Coastal Zone Management Act. This Act will provide adequate authority to control man's activities and should reduce lakeshore erosion. Specifically, the Act calls for the development of a State/local partnership for implementation of the Act. The State develops the guidelines and provides technical assistance to the local governments. The local governments must develop Municipal Management Programs which meet the State's guidelines and is certified by the State each year.

In the Contractor's opinion, the objectives of the Act and the programs it authorizes go a long way toward reducing shore erosion along Lake Michigan. However, riparian ownership rights and the implementation management plans and programs that are developed must be protected in the Act.

PART II

SUMMARIES OF LEGISLATION

CHAPTER 5

RELEVANT LEGISLATION

5.1 GENERAL

This Chapter presents a summary of the legislative authority for control of land use activities that may cause water pollution. Where information was available, the legislation is summarized by Act, with the implementing agency, affected land use activity, prupose, provisions, and administrative responsibilities indentified.

The summaries are presented in numerical order based on Chapter number. A listing of the Acts follows:

Article 7, Sections 1-5	Illinois Constitution
Article 7, Sections 6-9	Illinois Constitution (Home Rule Powers)
Chapter 19, Section 54	Approval of Boundary Lines
Chapter 19, Section 65	Approval of Structures in Lake Michigan
Chapter 19, Section 65a	Agreements for Withdrawal of Materials from the Bed of the Lake
Chapter 19, Section 65f	Construction permits in defined Flood Plains.
Chapter 19, Section 73	Grant of Jurisdiction Over Public Bodies of Water
Chapter 19, Section 150	Title to Submerged Lands
Chapter 19, Sections 1,141-1,146	Study and Survey of Lake Michigan Shoreline
Chapter 111 1/2, Sec. 1004	IEPA, Technical Assistance
Chapter 111 1/2, Sec. 1006	IIEQ, Technical Assistance
Chapter 111 1/2, Sec. 1011	Control of Water Pollution
Chapter 115, Sec. 13	Approval of Plats for Lands Abutting Public Waters
Chapter 127, Sec. 63b.14.14	General Planning Authority
Proposed Coastal Resources Management Act	

POLITICAL JURISDICTION: Illinois

Title or Reference: Proposed New Act, Coastal Resources Management Act

Implementing Agency: Division of Water Resources, Department of Transportation

Affected Land Use Activities: Land and Construction Excavation

Purpose:

To establish a State policy for the protection and enhancement of coastal resources embodied in a State management program and to cooperate fully with municipalities, other units of local government, State and regional agencies and commissions, other States and the federal government in developing a management program including unified policies, criteria, standards, methods and processes for the protection, preservation, enhancement, restoration, and orderly development of the coastal resources of the State.

Provisions:

1. To establish a State management program that will accomplish the following:

    a. To encourage the coordination of resource protection activities in the coastal zone.

    b. To review the actions of federal agencies and departments affecting the coastal zone.

    c. To designate by rule and to develop procedures for the planning and management of geographic areas of particular concern.

    d. To coordinate research among and to provide technical, financial, and administrative assistance to State agencies and units of local government.

    e. To provide technical assistance to persons within the coastal zone to foster the effective implementation of the State management program.

    f. To review municipal management programs for the purpose of certifying, decertifying, and recertifying municipalities and counties.

    g. To plan and manage for the preservation, protection and enhancement of the public trust in the Lake area.

    h. To establish guidelines for proposed land and water uses in the coastal zone.

    i. To issue permits in accordance with this Act.

2. Permits will be issued to control construction or land modification activities.

3. To require local jurisdictions to develop a municipal management program for the coastal zone under the local jurisdiction which will include management practices and policies related to the planning process, the regulation of construction and land modification, the accounting for and notice of to the State of county activities in the coastal zone to insure the proper administrative capability at the local level to implement the municipal management program, to insure public participation on planning or proposed ordinances or resolutions which affect the coastal zone, and to review the municipalities' capital development programs for their effect on the coastal zone.

Administrative Responsibilities:

Counties and municipalities are required to develop a municipal management program for their jurisdictions. The Division of Water Resources of the Department of Transportation is required to certify or decertify these programs and to provide assistance to the counties and muncipalities in developing and implementing their programs.

POLITICAL JURISDICTION: Illinois

Title or Reference: Constitution of Illinois of 1970, Article 7, Sections 1-5

Implementing Agency: Local Governments

Affected Land Use Activities: All

Purpose:

To establish and give appropriate power to local governmental units in the State.

Provisions:

1. To define units of local government as counties, municipalities, townships, special districts, and other units exercising governmental powers.
2. To specifically enumerate the powers of the counties and townships.

Administrative Responsibilities:

The local governments are authorized to carry out the powers given to them.

POLITICAL JURISDICTION: Illinois

Title or Reference: Constitution of Illinois of 1970, Article 7,
Sections 6-9, Home Rule Powers

Implementing Agency: Local Governmental Units

Affected Land Use Activities: All

Purpose:

To establish home rule local units of government in the State.

Provisions:

1. Counties having a chief executive officer elected at large and municipalities having a population of more than 25,000 and such other municipalities whose elections are by referendum, become home rule units.

2. The powers of home rule units are to exercise any power and perform any function pertaining to their governments and affairs, including but not limited to the power to regulate for the protection of the health, safety, morals and welfare, to license, to tax, and to incur debt.

3. The powers of non-home rule units, school districts and others are delineated.

Administrative Responsibilities:

This is general enabling legislation giving the powers to the local governmental units in the State of Illinois.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 54, Approval of Boundary Lines

Implementing Agency: Division of Water Resources, Department of Transportation

Affected Land Use Activities: Urban stormwater runoff, land and construction excavation

Purpose:

To establish the boundary line and the proper management of the shores of Lake Michigan.

Provisions:

1. To survey the shores of Lake Michigan.

2. To insure that the true and natural conditions of the shores of Lake Michigan are not wrongfully and improperly changed to the detriment and injury of the State.

3. To review every subdivision plat drawn for any land bordering or including any public waters of the State in which the State has any property rights or property interests.

4. To review and approve the boundary lines between private and public interests so as to remove or reduce any causes or contention between the State and riparian owners.

Administrative Responsibilities:

The Division of Water Resources of the Illinois Department of Transportation is responsible for establishing regulations and carrying out the provisions of the Act.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 65, Approval of Structures

Implementing Agency: Water Resources Division, Department of Transportation

Affected Land Use Activities: Shoreline Landfilling, Recreation, Lakeshore and Riverbank Erosion

Purpose:

To control the dumping and construction activities along the shoreline.

Provisions:

1. To control filling or depositing of rock, earth, sand, material or refuse matter of any kind or description in the lake.

2. To control the construction of any wharf, pier, dolfin, boom, weir, breakwater, bulkhead, jetty, causeway, harbor or watercraft mooring facilities, or any building or structure of any kind in the lake.

Administrative Responsibilities:

The Division of Water Resources of the Department of Transportation is required to issue a permit for any of the above activities prior to the initiation of the activity. In addition, concurrence from the Illinois Pollution Control Board is required prior to the issuance of a permit by the Water Resources Division of the Department of Transportation for a major land fill or dredging project in the bed of Lake Michigan.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 65a, Agreements for Withdrawal of Materials from the Bed of the Lake

Implementing Agency: Water Resources Division, Department of Transportation

Affected Land Use Activities: Dredging, recreation, land or construction excavation

Purpose:

To control the removal of resources from the bed of Lake Michigan.

Provisions:

To establish a procedure for the development of agreements between the State and private and local governments for their removal of earth, stone, sand, gravel, or any combination thereof from the bed of Lake Michigan.

Administrative Responsibilities:

The Water Resources Division of the Department of Transportation after it issues a permit for the disturbance of the lake bottom may enter into an agreement for the removal of the materials at a set price. In addition, the Department may permit any unit of government to withdraw material for any public project or construction work.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 65f

Implementing Agency: Division of Water Resources, Department of Transportation

Affected Land Use Activities: Land or construction activities

Purpose:

To control construction activities in defined flood plain areas.

Provisions:

1. To define flood plains.
2. Prohibits any construction activities in a defined flood plain area without a permit.

Administrative Responsibilities:

The Division of Water Resources of the Department of Transportation is required to issue a permit for any construction activities undertaken in defined flood plain areas. In addition the Division is responsible for planning, developing and evaluating the most economic combination of retention, storage, channel improvement and flood plain preservation.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 73, Grant of Jurisdiction Over Public Bodies of Water

Implementing Agency: Division of Water Resources, Department of Transportation

Affected Land Use Activities: Shoreline Landfilling, Recreation, Lakeshore and Riverbank Erosion

Purpose:

To identify the jurisdictional control over waters of the State of Illinois.

Provisions:

The Act gives the Division of Water Resources of the Department of Transportation full jurisdiction over every public body of water in the State of Illinois. This jurisdiction is subject only to the paramount authority of the United States with reference to navigation and any laws of the State of Illinois.

The Act further provides that nothing in the Act shall impair the rights of the citizens of Illinois to fully and in the proper manner enjoy the use of any and all of the public waters of the State.

Administrative Responsibilities:

The Division of Water Resources of the Illinois Department of Transportation is responsible for the management of all the public waters of the State.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Section 150, Title to Submerged Lands

Implementing Agency: Attorney General

Affected Land Use Activities: Shoreline Landfilling, Recreation, Lakeshore and Riverbank Erosion

Purpose:

To establish the legal ownership of all submerged lands in the State.

Provisions:

The State is deemed to hold lands and asserts its right to reclaim title to the lands of the State which are now submerged and lands that were formerly submerged but that have been illegally filled in, reclaimed and occupied.

The Act gives the State the authority to bring suit as may be deemed necessary to recover such lands or to protect lands from illegal occupation or encroachment.

Administrative Responsibilities:

The Attorney General is directed to bring such suits or actions as may be necessary to enforce the Act.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 19, Sections 1,141-1,146, Study and Survey of Lake Michigan Shoreline

Implementing Agency: Division of Water Resources, Department of Transportation

Affected Land Use Activities: All

Purpose:

To insure that all means and methods for preventing erosion of the shoreline of Lake Michigan are undertaken.

Provisions:

1. To develop plans which will devise effective means or methods for preventing erosion of the shoreline of Lake Michigan.
2. To develop plans that will identify programs that will prevent or minimize in the immediate future damage to homes or other buildings and danger to human life resulting from erosion.
3. To insure proper intergovernmental coordination to carry out the developed and approved plans.

Administrative Responsibilities:

The Division of Water Resources of the Department of Transportation is required to develop the appropriate plans and is authorized to cooperate and enter into agreements with units of government and the federal government to further the purposes of the Act.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 111 1/2, Section 1004, Environmental Protection, Technical Assistance

Implementing Agency: Illinois Environmental Protection Agency

Affected Land Use Activities: All

Purpose:

To insure a coordinated approach toward the control of water pollution in the State of Illinois.

Provisions:

1. The Illinois Environmental Protection Agency is designated as a water pollution agency under federal law.

2. All units of government within the State, including interstate agencies, are mandated to apply for federal funding only upon notice of the Illinois EPA.

3. The Illinois EPA is authorized to engage in a planning process and and activities and to develop plans in cooperation with units of local government and State agencies.

Administrative Responsibilities:

The Illinois Environmental Protection Agency as a designated water pollution agency under federal law must administer all the requirements of the federal law in the State of Illinois and be the clearing agency for all local government activity related to water pollution control.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 111 1/2, Section 1006, Technical Assistance

Implementing Agency: Illinois Institute for Environmental Quality

Affected Land Use Activities: All

Purpose:

To create the Institute of Environmental Quality and insure the conduct of practical research related to environmental matters.

Provisions:

1. To establish the Institute for Environmental Quality
2. To charge the institute with the responsibility to engage in practical research into environmental matters, including comprehensive study of the impact and rules and regulations of the Illinois Pollution Control Board.

Administrative Responsibilities:

The Illinois Institute for Environmental Quality is to carry out practical research into environmental matters and comprehensive studies of the impact of rules and regulations.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 111 1/2, Section 1011, Control of Water
Pollution

Implementing Agency: Illinois Environmental Protection Agency

Affected Land Use Activities: All

Purpose:

To establish jurisdiction for the enforcement of water quality standards.

Provisions:

To enforce water quality standards so as to restore, maintain, and enhance the purity of the waters of the State in order to protect the health, welfare, property, and quality of life; and to insure the adoption of regulations for the enforcement of water quality standards.

Administrative Responsibilities:

The Illinois Environmental Protection Agency has been given exclusive jurisdiction within the State for the enforcement of water quality standards. The Illinois Pollution Control Board is authorized to adopt regulations for the enforcement of the water quality standards.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 115, Section 13, Approval of Plats for Lands Abutting Public Waters

Implementing Agency: Water Resources Division, Department of Transportation

Affected Land Use Activities: Shoreline Landfilling, Recreation, Lakeshore and Riverbank Erosion

Purpose:

For the protection of persons and property and the identification of flood hazards along public waters.

Provisions:

The review and approval prior to recording of any map, plat or subdivision of lands, any part of which as shown on the map, plat or subdivision is situated within 500 feet of any surface drain or watercourse.

Administrative Responsibilities:

The Water Resources Division of the Department of Transportation is responsible for reviewing and approving the maps and plats for the subdivision of lands that are within 500 feet of a surface drain or watercourse. This approval requires the issuance of a permit by the Division of Water Resources.

POLITICAL JURISDICTION: Illinois

Title or Reference: Chapter 127, Section 63b 14.14, General Planning Authority

Implementing Agency: Illinois Department of Local Government Affairs

Affected Land Use Activities: All

Purpose:

To insure the proper planning at the State level and coordination between State and local planning activities.

Provisions:

1. To establish an Office of Research and Planning at the State level.
2. To provide for liaison between the State planning agency and regional and local planning agencies and departments.
3. To perform Statewide planning as is provided by law.
4. To provide assistance, counsel and advice to local and regional planning agencies when requested.
5. To conduct research into local governmental problems.
6. To coordinate statewide plan with the other units of government within the State.

Administrative Responsibilities:

The Office of Research and Planning of the Department of Local Government Affairs is required to carry out statewide planning and coordinate all planning with regional and local planning departments.

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THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK TO CONTROL POLLUTION FROM LAND USE ACTIVITIES IN THE UNITED STATES GREAT LAKES BASIN

THE STATE OF INDIANA

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IN SUBCONTRACT TO
GREAT LAKES BASIN COMMISSION
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46

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TABLE OF CONTENTS

PART I - PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTER 1 - INTRODUCTION 1
1.1 GENERAL 1
CHAPTER 2 - DEFINITIONS AND METHODOLOGY 4
2.1 GENERAL 4
2.2 LAND USE ACTIVITIES 4
2.3 CONTROL COMPONENTS 5
2.4 METHODLOLGY 6
CHAPTER 3 - INSTITUTIONAL AND LEGISLATIVE FRAMWORK 9
3.1 GENERAL 9
3.2 INSTITUTIONAL STRUCTURE 9
3.2.1 Stream Pollution Control Board 10
3.2.2 Environmental Management Control Board 10
3.2.3 Air Pollution Control Board 11
3.2.4 Relationship of the Environmental Management Control Board -- Stream Pollution Control Board -- Air Pollution Control Board to the Indiana State Board of Health 11
3.2.5 Indiana State Board of Health 12
3.2.6 Department of Natural Resources 13
3.2.7 Pesticide Review Board 17
3.2.8 State Planning Agency 18
3.2.9 Public Service Commission 18
3.2.10 Special Purpose Districts 19

48

TABLE OF CONTENTS (CONT'D.)

3.2.11 Local General Purpose Units of Government 22

3.3 LEGISLATIVE FRAMEWORK 25

3.3.1 Urban Areas 25

3.3.2 Agricultural Areas 36

3.3.3 Liquid, Solid and Deepwell Disposal 44

3.3.4 Transportation Corridors 48

3.3.5 Shoreline Filling 49

3.3.6 Extractive Operations 50

3.3.7 Recreation 51

3.3.8 Lakeshore and Riverbank Erosion 51

3.3.9 Forestry 52

CHAPTER 4 - FRAMEWORK ANALYSIS 59

4.1 GENERAL 59

4.2 ANALYSIS 59

4.2.1 Construction Site Runoff 59

4.2.2 Stormwater Runoff 59

4.2.3 Application of Pesticides 60

4.2.4 Feedlot Operations 60

4.2.5 Erosion from General Farm Practices 60

4.2.6 Private Sewage Disposal 60

4.2.7 Institutional Structure 61

PART II - SUMMARIES OF LEGISLATION

CHAPTER 5 - RELEVANT LEGISLATION 63

49

TABLE OF CONTENTS (CONT'D)

PART II - SUMMARIES OF LEGISLATION

CHAPTER 5 - RELEVANT LEGISLATION 63

5.1 GENERAL 63

BIBLIOGRAPHY 109

50

PART I

PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTERS 1 and 2

(Refer to Chapters 1 and 2, State of Illinois, pages 1 - 8)

52

CHAPTER 3

INSTITUTIONAL AND LEGISLATIVE FRAMEWORK

3.1 GENERAL

This Chapter presents the institutional structure and the legislative framework for nonpoint pollution control in the State of Indiana. Section 3.2 identifies the institutions involved in nonpoint pollution control, and presents brief descriptions of the key institutions. Section 3.3 presents the legislative framework in matrix form, followed by a discussion of the magnitude of the problem, current controls, and evaluation of the controls and their implementation.

3.2 INSTITUTIONAL STRUCTURE

Pollution control responsibilities in Indiana are shared among different State and Substate agencies. Table I presents those agencies for each level of government.

TABLE I

AGENCIES WITH NONPOINT POLLUTION CONTROL RESPONSIBILITIES

STATE	SUBSTATE
Environmental Management Control Board	Cities
Air Pollution Control Board	Towns
Stream Pollution Control Board	Counties
Indiana State Board of Health	County Drainage Board
Natural Resources Commission	Conservancy Districts
Department of Natural Resources	Soil and Water Conservation Districts
Pesticide Review Board	Sanitary Districts
State Chemists Office	Regional Water and Sewer Districts
State Planning Agency	Regional Planning Commissions
Public Service Commission	

A description of the key State and all the Substate governmental units follows.

3.2.1 Stream Pollution Control Board

The Stream Pollution Control Board is the prime agency having jurisdiction over all water pollution control programs in Indiana. More specifically, under the law the Board is given broad powers to control and prevent pollution of waters in Indiana with substances injurious to public health, industry or wildlife.[1] The Board is composed of the Secretary of the State Board of Health, the Director of the Department of Natural Resources, the Lieutenant Governor, and four members appointed by the governor for terms of four years. No more than two of the latter group may be of the same political party. A sanitary engineer designated by the Secretary of the Board of Health acts as technical secretary of the Board.[2] The Board itself has no staff. It draws upon the staff of the Indiana State Board of Health, particularly the Sanitary Engineering Division for Solid Waste and Land Disposal and the Water Pollution Control Division within the Bureau of Engineering.[3] The Sanitary Engineering Division for Solid Waste and Land Disposal has 65 positions, 15 of which deal specifically with solid waste matters. The Water Pollution Control Division as 130 positions.[4]

The Board is responsible for developing Indiana's water quality standards. In addition, the Board establishes treatment and control requirements for wastewater discharges, issues permits and approves plans for wastewater treatment and control facilities, inspects such facilities and enforces compliance with standards. It handles the Municipal Construction Grant Program and is the designated State Agency for 208 Areawide Planning. It also has jurisdiction for the Solid Waste Regulatory Program.[5]

3.2.2 The Environmental Management Board

The Environmental Management Board (EMB) is responsible for coordinating the environmental (air pollution, water pollution, water supply, and solid waste) programs and policies carried out by the various State agencies and departments in Indiana (Environmental Management Act, IC-1971), and serves as a final authority for environmental control in Indiana.

The EMCB must officially approve Stream Pollution Control Board and Air Pollution Control Board standards and regulations before they become effective. The Board is also responsible for controlling the public water supply.

The Board consists of eleven members appointed by the governor:[6]

- Secretary of the State Board of Health
- Director of the Department of Natural Resources
- Director of the Research and Economic Development and Planning Group, Department of Commerce
- Chairman of the Air Pollution Control Board
- Chairman of the Stream Pollution Control Board
- A Representative of Municipal Government
- A Representative of Agriculture
- A Representative of Labor
- A Representative of Industry
- Two Public-at-Large Representatives with Environmental Management Background.

The State Board of Health provides staff for the EMB.

3.2.3 The Air Pollution Control Board

The Air Pollution Control Board is responsible for controlling air pollution at the State level. Certain responsibilities can be delegated to local air pollution control agencies.

The Board has the authority to establish air quality and emission standards and to establish and enforce compliance schedules.

The Air Pollution Control Board is composed of seven members, six of whom are appointed by the governor, and the secretary of the State Board of Health who is an ex officio member. The six appointed members are required to include a physician, an engineer, and representatives of agriculture, industry, municipal government, and the general public. A sanitary engineer for the State Board of Health is designated to serve as technical secretary of the control board.[7]

3.2.4 The Relationship of the Environmental Management Board -- Stream Pollution Control Board -- Air Pollution Control Board to the Indiana State Board of Health

The Environmental Management Board, Stream Pollution Control Board, and Air Pollution Control Board are all separate, independent and sovereign agencies having legislative jurisdictions and authority in specific environmental areas.

Basically, the Stream Pollution Control Board controls water pollution and solid waste disposal activities. The Air Pollution Control Board controls air pollution. The Environmental Management Board controls public water supplies and has to approve regulations proposed by the other two boards. All boards have regulatory powers in their respective areas.

The Board of Health, however, as a practical matter, has no regulatory authority in the above areas. It does conduct and provide for the administrative activities of the other boards. Neither the Environmental Management Board, Air Pollution Control Board, nor Stream Pollution Control Board have budgets or staff as such. The Board of Health is a full governmental department which provides staff for the various environmental activities of other boards. Figure 1 presents the structural arrangement between the boards and the State Board of Health.

The "legal person" for each of these boards is a "technical secretary" who signs documents on behalf of the boards and directs the staff. Law provides that the technical secretary of the Environmental Management Board shall be the Assistant Commissioner for Environmental Health. For the other two boards, law specifies that the technical secretary shall be appointed by the Secretary of the State Board of Health (State Health Commissioner). The technical secretary for the Air Pollution Control Board is again the Assistant Commissioner for Environmental Health and the technical secretary for the Stream Pollution Control Board is the Director of the Bureau of Engineering, the immediate subordinate of the Assistant Commissioner.[8]

3.2.5 Indiana State Board of Health

The Indiana State Board of Health's general purpose is to protect the health and lives of the citizens of the State. The Board develops the State's general policy on health and health laws.[9] The functions of the Board are vast. They range from keeping vital statistics to licensing hospitals. The Board has no environmental regulatory powers. However, it does conduct and provide for the administrative activities for the Stream Pollution Control Board, the Environmental Management Board and the Air Pollution Control Board.

The State Board of Health has approximately 876 employees. The Board's staff in the Bureau of Engineering under the supervision of the Assistant Commissioner for Environmental Health provides the staff for the SPCB, EMB, and the APCB. The divisions in the Bureau of Engineering, such as the Division of Air Pollution, Water Pollution Control and Sanitary Engineering are organized to conduct these activities.[10]

More specifically, the Bureau of Engineering is responsible for supervision in conjunction with local health authority, over public and semipublic water supplies, sewage disposal, swimming pools, tourist camps and plumbing facilities in governmental institutions.[11]

3.2.6 Department of Natural Resources

The Department of Natural Resources, which is responsible to the Natural Resources Commission, was created by the Natural Resources Act of 1965. The Act transferred to the Department the powers, duties, functions and appropriations of the former Department of Conservation and the Indiana Flood Control and Water Resources Commission and, for administrative purposes, the Indiana Recreation Council, the Great Lakes Commission, and the State Soil and Water Conservation Committee.[12 & 13] The Department of Natural Resources consists of the Director of DNR, two deputy directors and a full-time staff of 900 persons.[14]

3.2.6.1 Natural Resources Commission

The Department of Natural Resources is required by law to report to the Natural Resources Commission. The Natural Resources Commission is made up of 12 members, five of whom are appointed by the governor and seven of whom are ex officio. The ex officio members are: (1) the Chief Engineer of the State Highway Commission, (2) the Technical Secretary of the Stream Pollution Control Board, (3) the Director of the Department of Commerce or his designated deputy, (4) the Director of the Department of Natural Resources, (5) the Chairman of the Advisory Council on Land, Forest and Wildlife Resources, (6) the Chairman of the Advisory Council on Water and Mineral Resources, and (7) the President of the Indiana Academy of Science or his designee.[15]

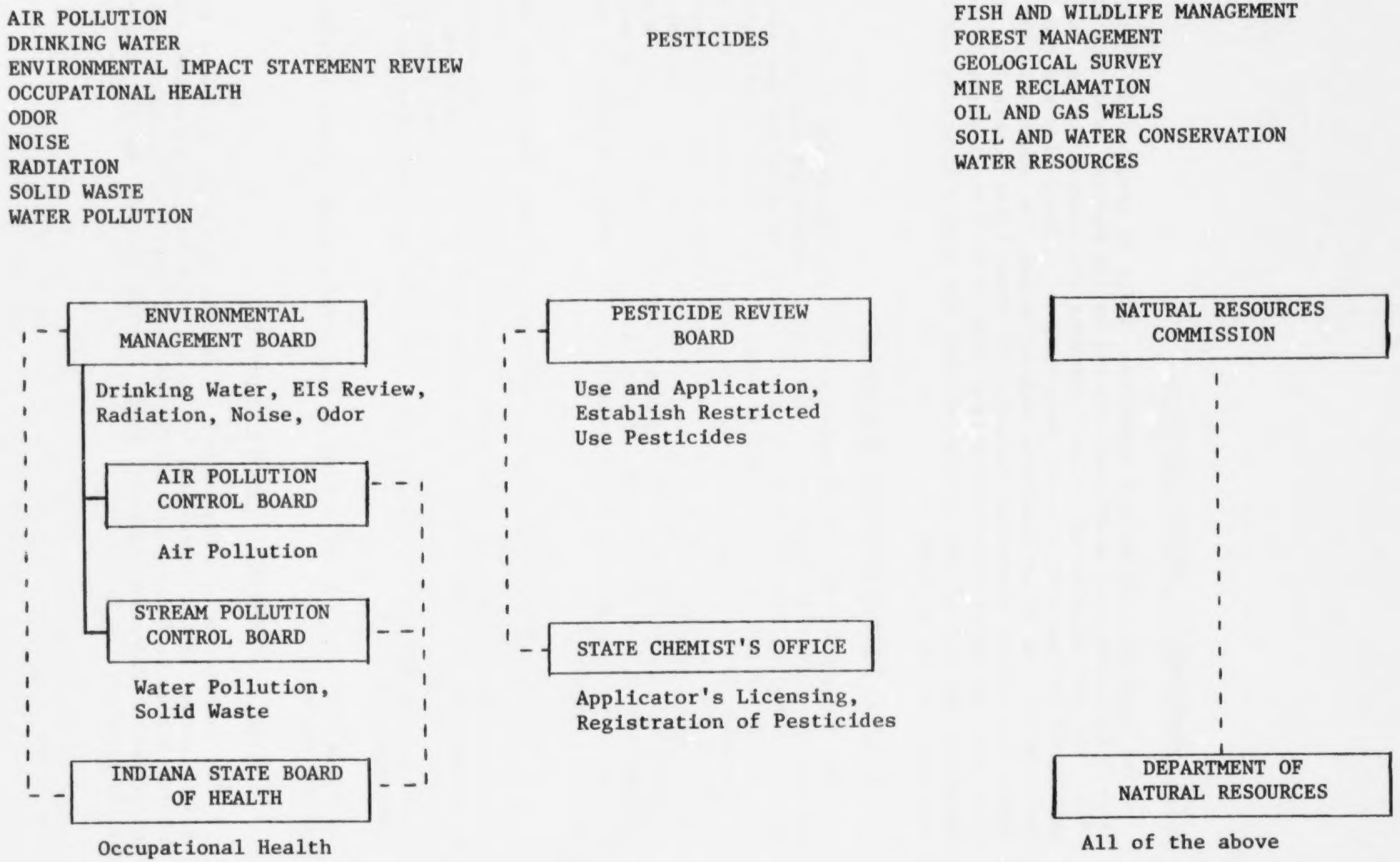
By law, the Commission has the authority to issue permits for construction in floodways under the Indiana Flood Control Act (IC 13-2-22) and make those permits subject to restrictions or conditions on how alteration of streams may be carried out to minimize disturbance to stream and stream quality. To date, the Division of Water, DNR, issues permits with the approval of the NRC. DNR provides staff and administrative services for the Commission.[16]

Refer to Figure 1 for a view of the structural arrangement between the DNR and the NRC.

3.2.6.2 Department of Natural Resources

The Director of the Department of Natural Resources serves as an ex officio member of the State Soil and Water Conservation Committee, the Natural Resources Commission, the Stream Pollution Control Board, and the Environmental Management Control Board.[17] The Director of DNR is appointed by the governor.

FIGURE 1
INDIANA ENVIRONMENTAL ORGANIZATION


AIR POLLUTION
DRINKING WATER
ENVIRONMENTAL IMPACT STATEMENT REVIEW
OCCUPATIONAL HEALTH
ODOR
NOISE
RADIATION
SOLID WASTE
WATER POLLUTION
PESTICIDES
FISH AND WILDLIFE MANAGEMENT
FOREST MANAGEMENT
GEOLOGICAL SURVEY
MINE RECLAMATION
OIL AND GAS WELLS
SOIL AND WATER CONSERVATION
WATER RESOURCES
ENVIRONMENTAL MANAGEMENT BOARD
Drinking Water, EIS Review, Radiation, Noise, Odor
AIR POLLUTION CONTROL BOARD
Air Pollution
STREAM POLLUTION CONTROL BOARD
Water Pollution, Solid Waste
INDIANA STATE BOARD OF HEALTH
Occupational Health
PESTICIDE REVIEW BOARD
Use and Application, Establish Restricted Use Pesticides
STATE CHEMIST'S OFFICE
Applicator's Licensing, Registration of Pesticides
NATURAL RESOURCES COMMISSION
DEPARTMENT OF NATURAL RESOURCES
All of the above

NOTE: The Indiana State Board of Health provides staff and administratives services for the EMB, APCB and SPCB. The State Chemist's Office provides staff and administrative services for the Pesticide Review Board. The Department of Natural Resources provides staff and administratives services for the Natural Resources Commission.

DNR is composed of two bureaus -- the Bureau of Water and Mineral Resources, and the Bureau of Land, Forest and Wildlife Resources. Each is administered by a deputy director. Each bureau has an advisory council of 12 members appointed by the governor. These councils act in an advisory capacity on matters pertaining to policy and administration of programs and facilities.[18] Figure 2 is the organizational chart of the Department.

The Department is responsible for administering the State's programs in parks, forestry, fish and wildlife, soil and water conservation, flood control and water resources, geology, oil and gas, entomology, nature preserves, outdoor recreation, museums and memorials, reclamation and conservation law enforcement.[19]

The DNR's authority in water quality management stems from its representation on the Stream Pollution Control and Environmental Management Control Boards and its involvement in flood control. DNR has jurisdiction over all public and private waters in the State as well as adjoining lands necessary for flood control purposes. Any construction proposed within the 100-year flood plain is subject to DNR approval. The DNR serves in an investigatory role to provide technical information regarding soil erosion, drainage systems, and the reclamation of disturbed lands for use by other agencies in the implementation and regulation of water pollution control programs. The DNR thus cooperates with the SPCB and SBH to protect natural resources including lands and waters of the State. In addition, the Department conducts cooperative studies with the U.S. Geological Survey on groundwater resources and pollution problems.[20]

The DNR also administers local information and technical support services on a county level through the Soil and Water Conservation Districts (SWCD).[21]

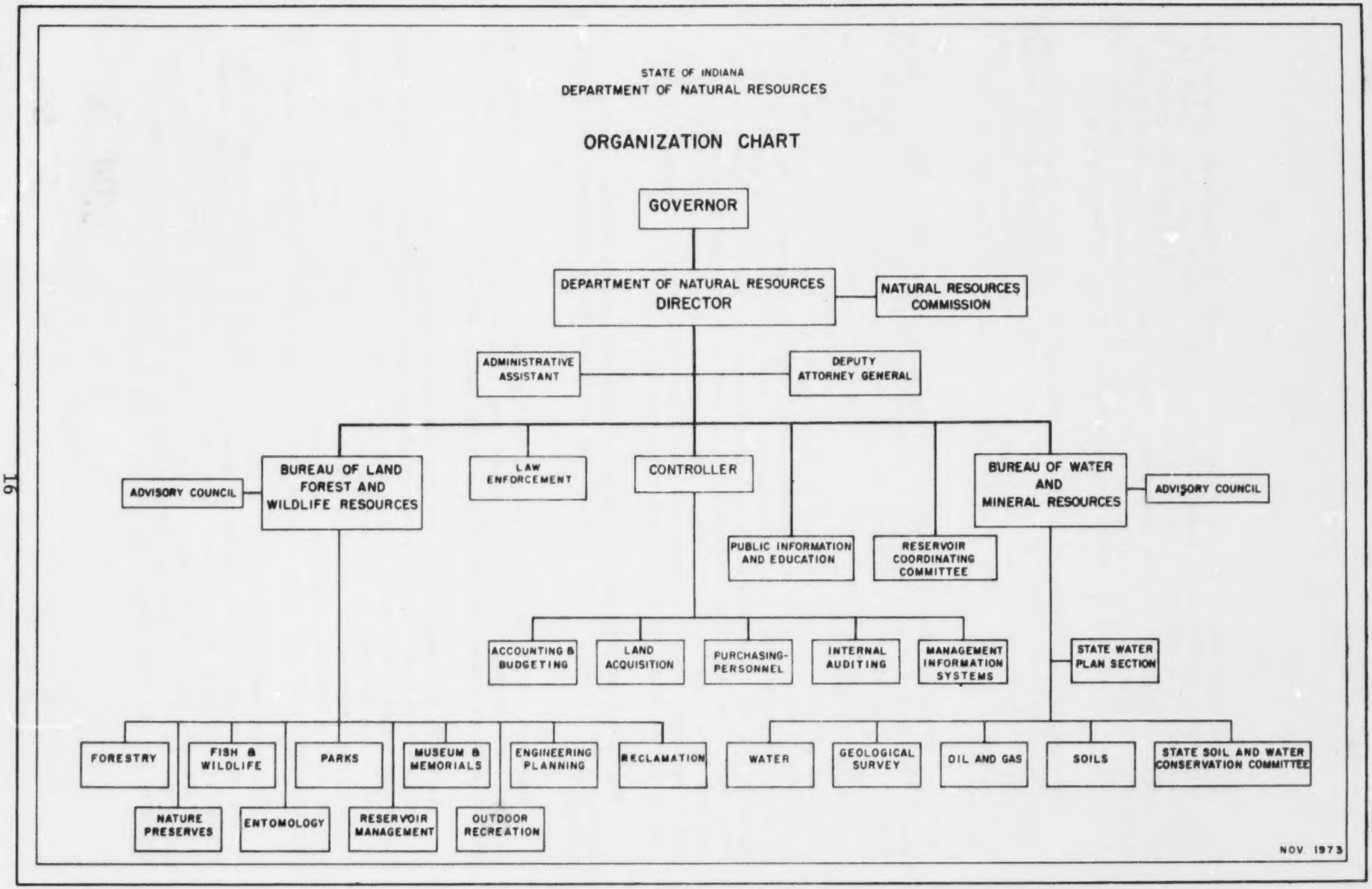
The Department is also responsible for issuing permits for extraction, removal, and deposits of coals, limestone, gypsum, sand and other specific minerals on or under any lands or non-navigable waters.

Further, the Department has the authority to plug, replug or repair oil or gas wells which have been abandoned and are leaking, and to develop rules and regulations controlling the drilling, utilization and plugging of test holes for and in connection with fluid disposal, mineral resources, engineering projects or geologic investigations. With respect to the second authorization, the Department is required to issue permits for drilling test holes of 200 feet or more and is vested with enforcement powers.[22]

The Department has the authority to issue permits regulating surface mining and requiring that areas subjected to surface mining follow established reclamation procedures. Most of the activities related to mine reclamation and oil and gas wells occur in Southern Indiana.[23] The DNR has authority to certify camping places for public use when such places are approved by the Department and by the State Board of Health.[24]

59

FIGURE 2


STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES

ORGANIZATION CHART

GOVERNOR
DEPARTMENT OF NATURAL RESOURCES DIRECTOR
NATURAL RESOURCES COMMISSION
ADMINISTRATIVE ASSISTANT
DEPUTY ATTORNEY GENERAL
ADVISORY COUNCIL
BUREAU OF LAND FOREST AND WILDLIFE RESOURCES
LAW ENFORCEMENT
CONTROLLER
PUBLIC INFORMATION AND EDUCATION
RESERVOIR COORDINATING COMMITTEE
BUREAU OF WATER AND MINERAL RESOURCES
ADVISORY COUNCIL
ACCOUNTING & BUDGETING
LAND ACQUISITION
PURCHASING-PERSONNEL
INTERNAL AUDITING
MANAGEMENT INFORMATION SYSTEMS
STATE WATER PLAN SECTION
FORESTRY
NATURE PRESERVES
FISH & WILDLIFE
ENTOMOLOGY
PARKS
RESERVOIR MANAGEMENT
MUSEUM & MEMORIALS
OUTDOOR RECREATION
ENGINEERING PLANNING
RECLAMATION
WATER
GEOLOGICAL SURVEY
OIL AND GAS
SOILS
STATE SOIL AND WATER CONSERVATION COMMITTEE

NOV. 1973

Source: State of Indiana, Department of Natural Resources.

Under the Flood Plain Management Act of 1973, DNR, acting under authority of the Natural Resources Commission, offers a program which provides technical assistance for local zoning and management of lands which are subject to periodic flooding in the State.

3.2.6.3 State Soil and Water Conservation Committee

Operating the Bureau of Water and Mineral Resources is the seven-member State Soil and Water Conservation Committee. Serving ex officio on the committee are the Director of the Department of Natural Resources, the Director of the Purdue University Cooperative Extension Service and the Commissioner of Agriculture (the lieutenant governor) or his designated representative. The four additional members, who must be "freeholders with interest in farming," are appointed by the governor.

The agency's functions include those which have been assigned to the previously-existing Soil Conservation Committee and water conservation. In general, the Committee deals with control and prevention of soil erosion, the prevention of flood water and sediment damage, and the conservation, development, utilization and disposal of water in the watersheds of the State through established soil and water conservation districts.[25]

More specifically the Committee is responsible for seeing that local SWCD's are properly organized and function in accordance with the law. The Committee also makes the appointment of local supervisors, maintains permanent records for each district, trains supervisors, and appropriates State funds.[26]

3.2.7 Pesticide Review Board

The Pesticide Review Board is responsible for assisting the State chemist in administering the pesticide control law. Among its most important duties is the classification of pesticides according to use, and adopting a list of "restricted use pesticides" and "pesticides for use by prescription only." It is only responsible for establishing rules and regulations providing for the safe handling, transportation, storage, distribution and disposal of pesticides, as well as rules and regulations restricting or prohibiting the use of certain types of containers or packages for storing specific pesticides.

Ex officio members of the Board are the State toxicologist and the State veterinarian. The remaining voting members, appointed by the governor, consist of one representative each from the State Board of Health, the Department of Natural Resources, the Purdue University Agricultural Experiment Station, and the Indiana Cooperative Extension Service, two ecologists with earned doctorate degrees and one "public representative."

Four additional members serve in a non-voting, advisory capacity. These members, also appointed by the governor, consist of one representative of the pesticide industry, one representative of producers of agricultural crops on which pesticides are applied or which may be affected by the application of pesticides and two public representatives from conservation organizations.[27]

The State Chemist is charged with the responsibility of administering the law regulating the registration, labelling, distribution, sale and use of pesticides (Applicator's Licensing Program). In both cases, the State Chemist's office provides all the staff for the enforcement of the regulations.

3.2.8 State Planning Services Agency

The State Planning Services Agency is responsible for the operation of all elements of the comprehensive planning program, including surveys, land use studies, and technical services at the local, regional and State level. Under the direction of an executive council, chaired by the governor or his designee, the agency has three divisions. They are the following:[28]

The Local and Regional Planning Assistance Section of the SPSA renders technical assistance to local communities and regional planning bodies and assists them in obtaining funding. SPSA offers information and technical assistance to communities which are incapable of meeting HUD requirements for Federal assistance on their own.[29]

The State Planning Assistance Section of the SPSA promotes cooperation between State agencies, local units of government and regional planning commissions, as well as conducting Statewide studies relating to overall economic and physical development.[30]

The Public Transportation Division is responsible for transportation planning in the State in cooperation with the State Highway Commission, and for providing technical assistance and guidance to local agencies with transportation responsibilities in order to help them utilize Federal mass transportation funds. The preparation and implementation of a transportation plan is a major responsibility of this section, which is authorized to receive and disburse certain Federal mass transportation funds and matching State funds.[31]

3.2.9 Public Service Commission

The Indiana Public Service Commission acts as a regulatory body with respect to the character of service and the rates of public utilities. One of the duties of the Commission is the authorization and control of private sector sewage control facilities in rural areas. The Public Service Commission issues a Certificate of Territorial Authority (CTA), essentially a franchise granted by the Commission allowing a utility to operate within a specific area. Conservancy Districts which propose to treat waste from areas outside of their District boundaries and semi-public sewage treatment facilities also must obtain permits or CTA's from the Public Service Commission. CTA's are not required for municipally-owned and operated treatment plants. The Public Service Commission has no other regulatory function in the area of water quality programs, except to settle rate disputes when one utility is ordered to connect to another utility by the SPCB under the Environmental Management Act. The authority of the Commission is contained in IC 8-1-2. The Commission has a 3-member board appointed by the governor.[32]

3.2.10 Special Purpose Districts

In Indiana there are five special purpose units of government which either have the authority to control or can impact in some way, non-point source pollution. They are:

- Conservancy Districts
- Soil and Water Conservation Districts
- Sanitary Districts
- County Drainage Boards
- Regional Water and Sewer Districts.

3.2.10.1 Conservancy Districts

Conservancy Districts are established in specific geographic areas. They are not necessarily formed on a countywide basis. CD's are created upon the approval of a petition sent to the Court. CD's are administered by a Board of Directors originally appointed by the Court, and subject to State regulations through the NPDES program and through the Public Service Commission.[33]

Any area may be established as a district, but no part of a district may be completely separate from any other part. Cities may be included in whole or in part within the district. Conservancy Districts may be established for a number of purposes including the provision of water supply; sewage treatment and disposal; the prevention of soil erosion; and the storage of water for stream flow augmentation. There are less than six CD's that have the responsibility of providing sewage treatment and disposal and a few that are responsible for water supply. All of the CD's can levy user charges and ad valorem taxes. In spite of these stated purposes, CD's do not currently administer regulatory programs nor do they have enforcement authority over non-point source pollution within the district.[34]

3.2.10.2 Soil and Water Conservation Districts

The authority to establish Soil and Water Conservation Districts is under the Soil and Water Conservation Districts Act. There is one Soil and Water Conservation District for each of the 92 counties in the State. Each district is run by a board of five local supervisors. Three board members are elected by landowners in the district and two are appointed by the State Soil and Water Conservation Committee.

Under the law, SWCD's have the general authority to carry out conservation measures within their areas, to construct and maintain structures necessary for their authorized purposes, to develop comprehensive plans for resource conservation, and to assist land occupiers within their district to achieve resource conservation objectives. Control measures which the SWCD's are authorized to impose include engineering operations, improved cropping practices, seeding and planting of eroded lands, soil stabilization, runoff retardation, and other conservation practices. In conducting control measures, SWCD's must obtain the consent of the landowner or occupier of the land. Specific language in the Act restricts SWCD's from exercising eminent domain, incurring debts or levying taxes or special assessments.[35]

With regard to controlling non-point sources of pollution such as sedimentation and animal wastes, SWCD's have no regulatory authority over local practices. Their role is one of encouragement, demonstration and technical assistance to landowners interested and volunteering to participate in conservation projects and practices.[36]

An SCS conservationist is designated for each county district. In addition to the services of the conservationists and other technical assistants through the SCS, SWCD's receive small appropriations from county governments. Other revenues are provided through the State Soil Conservation Committee, donations and associate membership. Income is also generated through the sale of investments. Funding generated from the various sources pays for the operation of the office and clerical services.[37]

SWCD's do cooperate with the county Agricultural Stabilization and Conservation (ASC) committees in obtaining Federal cost-sharing monies for conservation practices.

SWCD's are also the co-sponsors of small watershed projects under the Watershed Protection and Flood Prevention Act, as amended, in conjunction with Conservancy Districts. The Conservancy District becomes the contracting organization which carries out the structural measures of the project. SWCD's cooperate with landowners and operators in applying soil conservation measures required under the Act to protect the structural improvements of the project.[38]

3.2.10.3 Sanitary Districts

Sanitary Districts are special purpose districts with authority to finance, construct, and maintain sewers and sewage disposal facilities, as well as surface drainage sewers, and to collect and dispose of refuse and solid waste. They also have regulatory powers. Sanitary Districts are generally restricted to establishment in first and second class cities. There are separate acts which authorize creation of districts for the various size cities or in counties which have a specific population range.

There are eight sanitary districts in Indiana; five are in the Lake Michigan basin and are Hammond, Gary, East Chicago, Whiting and Michigan City.[39]

Facilities are usually financed through the sale of general obligation-type bonds with a ceiling on bonded indebtedness of 12 percent of the assessed evaluation in the district. Revenues are derived through property taxation. However, the sale of revenue bonds and the imposition of user charges is permitted for most, if not all, districts.

They have the power to control water pollution in the district and conceivably could require sediment control measures by regulation.[40]

3.2.10.4 County Drainage Boards

County Drainage Boards are responsible for the construction and maintenance of "legal" drains. Primarily the boards are concerned with keeping the drains clear to allow proper movement of water. The county commissioners, or a board appointed by the Board of County Commissioners and consisting of three or five members at the discretion of the county commissioners, together with the county surveyor ex officio (or, in counties of the first class -- Marion and Lake -- a deputy appointed by the surveyor to serve as non-voting member), constitute the County Drainage Board. An appointed board shall have at least one member who is a county commissioner with the remaining members being resident freeholders knowledgeable in drainage matters.[41]

County Drainage Boards have jurisdiction and regulation over any construction that takes place within 75 feet of any legal drain within the county. Legal drains are those which have been so designated by the courts. If a drainage problem occurs, however, there is no agency, State or local, which has the responsibility to do anything about it. Most drainage problems must be settled between the parties concerned or in the courts. If a legal drain is causing a problem there are mechanisms for the Drainage Board to dredge, enlarge or reconstruct the drain at the expense of all landowners in the drainage area benefitting from the improvement.[42]

Petitions for drainage construction are filed with the Board which determines whether they are practicable and/or beneficial. The Board determines assessments against affected property owners, based on benefits they realize from the projects. Provided no remonstrances are successful, the Board can contract for drainage construction and sell bonds, when necessary, for financing. The surveyor, as technical authority for the Board, makes necessary studies and prepares specifications for drains. He also is supervisor of actual construction. The Board can hire an attorney to handle legal details.[43]

3.2.10.5 Regional Water and Sewer Districts (Regional Sewage Districts)

Regional Water and Sewer Districts, like Conservancy Districts, are responsible for providing sewer and water service to particular geographic areas. The Districts are organized under an order of the SPCB and are administered by an appointed or elected board of trustees.[44]

The Districts have a number of powers relating to the provision of water and sewer service including the right to require buildings to connect to sewer systems if there is a sewer available within 300 feet. They may also enforce and collect "reasonable" penalties for failure to connect. Beyond these powers, however, the scope of the authority of the Regional Water and Sewer District is limited.[45]

3.2.11 Local General Purpose Units of Government

At the local level, there are general purpose units of government that have some form of authority to control non-point pollution. They are:

- Counties
- Cities
- Towns.

3.2.11.1 Counties

Counties are general purpose units of government that have limited home rule powers and must rely on those powers specifically delegated to them by the State. The limited "home rule" grant, as defined in Public Law 158, specifically denies the power to: (1) enact laws governing private or civil relationships; (2) define and provide for punishment of crime (except by ordinance); (3) require a franchise, certificate or permit to operate any common or contract carrier of passengers or property; (4) impose any tax (except for fees or service charges); (5) impose duties or functions upon cities, towns, other municipal corporations, districts, agencies or other counties; (6) regulate private activity outside county boundaries, and (7) establish conditions or limitations affecting the county's own civil liability.[46]

County governments have no administrative head, rather they are directed by a three-member board of commissioners (Board of County Commissioners) and a seven-member county council. All are elected officials serving four year staggered terms. The county commissioners are responsible for administrative duties, budget preparation, issuance of bonds, contract negotiation and administration, road and bridge maintenance, appointment of county officials authorized by law, and the enactment of county ordinances. The county council is empowered to fix the tax rate and levy, make appropriations from the county treasury, adopt the annual budget, reappropriate surplus funds, and approve all real estate sales and purchases by the county in excess of $1,000.[47]

Other elected county officials include the county auditor, county treasurer, county assessor, circuit court judge, superior court judge, county clerk, county recorder, county surveyor, county sheriff, prosecuting attorney and county coroner. Each county has several appointed officials, boards and commissions. County governments are also empowered to appoint boards, commissions and positions to supervise various programs and responsibilities. County government jurisdiction generally does not extend within incorporated municipal boundaries.[48]

There are 92 counties in Indiana.

66

With regard to water quality management, county governments can establish a permit system for installation of septic tank systems and the drainage of water from land. While the County Drainage Board can undertake projects to improve drainage and indrectly have some control of soil erosion, their jurisdiction does not extend beyond 75 feet of the walls of the drainage ditch for regulatory purposes (IC 19-4-6). Except for large metropolitan counties (e.g., Marion County), most county governments have extremely small staffs and resources to administer regulatory programs in the water quality planning and control areas.[49]

Counties may establish planning commissions under Indiana law to formulate zoning controls and subdivisions standards as well as prepare comprehensive plans for community development. The county planning commissions have jurisdiction in all unincorporated areas and in municipalities that have elected to "join" the County Plan Commission. In such an instance the municipality would not establish a separate plan commission.[50]

In addition the Board of County Commissioners has the authority to establish and operate facilities for the collection and disposal of refuse. The method of disposal is subject to approval by the State Board of Health.

All counties have the power of eminent domain, the authority to accept grants and may use tax and special assessment revenues for projects.

3.2.11.2 Cities and Towns

There are over 550 cities and towns in Indiana. They are "creatures" of the State and only possess those powers delegated to them by the State.

With regard to water quality management cities and towns under Indiana law have broad powers relating to the construction and operation of sewage treatment works. These local governments may adopt regulations or ordinances pertaining to the provision of sewage treatment including regulations requiring pretreatment of industrial wastes. Cities, furthermore, have powers relating to waterworks and construction activities. Cities of the first, second, third and fourth classes, which own waterworks have jurisdiction extending up to 25 miles, for the purpose of preventing any pollution of the municipal water supplies. Broadly interpreted, this authority could include non-point and point sources of pollution. Cities also have authority to indirectly control other non-point sources, specifically construction activities. Under Indiana law, cities may regulate and license the construction of structures and other land improvements.[51]

Like counties, cities and towns may establish planning commissions under Indiana law to formulate zoning controls and subdivision standards as well as to prepare comprehensive plans for community development. Under the Indiana Code governing bodies are to be guided by the master plan in the authorization, acceptance or construction of watermains, sewers, connections, facilities or utilities. The effect on water quality management varies greatly from one commission to another, according to the powers and program activities of individual planning commissions and their staffs.[52]

Towns are created upon petition filed with the county commissioners of the county in which a major part of the area to be incorporated is situated by the citizens of the territory to be incorporated. The petition must be signed by at least 50 owners of real property within the area and must be accompanied by an accurate survey of land contained in the area, an enumeration of the residents, resident and non-resident landowners, a statement of the assessed valuation of all real property within the area, a statement of the services to be provided to the residents, and an estimate of the cost of such services and the name to be given to the proposed town.

The county commissioners, upon receipt of the petition, forwards one copy to the Indiana Department of Commerce and one copy to the plan commission, if any, having jurisdiction. These agencies are required to report their recommendations for approval or disapproval to the commissioners. The county commissioners are required to hold a public hearing. If all requirements are satisfied the commissioners may introduce an ordinance incorporating the town. The annexing of more territory can be achieved through the passage of an ordinance by the City Council or town trustees. However, no city may be annexed to another such city except through passage of ordinances by each city and a subsequent election in both in which the majority of the qualified voters vote in favor of such a union.[53]

Towns are established as those incorporated places having less than 1,500 population. However, some places having more than 1,500 population still are classified as towns, since they have not held necessary elections to be come cities.[54]

Cities of the various classes are set up on the basis of population within the city limits as follows:

First class...............	250,000 and over
Second class..............	35,000 to 250,000
Third class...............	20,000 to 35,000
Fourth class..............	10,000 to 20,000
Fifth class...............	1,500 to 10,000

The Common Council (City Council) is the legislative body in a city government. The mayor serves as the chief administrative officer of a city. The powers of the city councils and mayors are delegated specifically to various departments for execution. The number of departments established by a city may vary. There may be departments dealing in such activities as finance, law, public safety and welfare, planning, health, development, etc.[55]

In addition, cities have the power to borrow money, acquire property by eminent domain, establish, construct, maintain and control public waterways, enter into contracts and accept grants and gifts.

3.3 LEGISLATIVE FRAMEWORK

The legislative framework for the State of Indiana is a body of law relating to water quality. In addition to describing the laws it is also important to identify the degree and effectiveness of their implementation.

The legislative framework is presented in summary form on Table II, Summary of Legislative Framework, with a summary of the evaluation of current activity being presented in Table III, Summary of Analysis. The following subsections of this discussion present in more detail the legislative framework and the evaluation as summarized in the two tables. Each table is accompanied by a page of notes identifying different symbols that are used on the table and any specific clarifying comments necessary in the presentation of the table.

3.3.1 Urban Areas

3.3.1.1 Site Construction Runoff

Magnitude of the Problem

New construction sites in urban areas can exert a non-point source loading of sediments up to 500 times greater per unit area than is evident in agricultural operations. Construction is an extensive land disturbing activity and places urban lands under unstable conditions, resulting in a high loss of topsoil.[56]

In Indiana, approximately 45,000 new housing starts occurred in 1976, and 7,141 permits were issued by the Administrative Building Council for all buildings other than single and two-family residents.[57] Research indicates that the problem of construction site runoff is considered moderate.[58]

Current Activities

There are a number of statutes which provide various agencies and boards in Indiana with the authority to regulate non-point sources of pollution caused by construction site runoff. They are:

- Flood Control Act of 1973
- Drainage Code
- A Variety of Plan Commission Authorities
- Enabling Legislation for Cities, Towns and Counties

INDIANA TABLE II — SUMMARY OF LEGISLATIVE FRAMEWORK

CHAPTER	LAND USE CATEGORY[1]									Regulations[2]	IMPLEMENTING RESPONSIBILITY[3]				TYPE OF CONTROL[4]						COMMENTS/IMPLEMENTING AGENCY
	Urban	Agriculture	Liquid/Solid Waste	Transportation	Shoreline Landfill	Extractive Operations	Recreation	Lakes & Riverbanks	Forest		State	County	Municipality	Special District	Direct (PC)	Planning (P)	Indirect (OS)	Non-Statutory (NS)	Management (MP)	Fiscal (F)	
Environmental Management Act	X	X	X	X		X	X	X	X	NO	X				X	X	X	X			Environmental Management Board Stream Pollution Control Board
Regional Water/Sewer/ Solid Waste District			X							NO				X			X				Regional Water/Sewer/ Solid Waste Districts
Refuse Disposal Act Solid Waste Management Permit Regulations			X							YES	X	X	X	X	X	X	X				Stream Pollution Control Board
Flood Control Act IC 71-13-2-22	X	X	X							N/A	X	X	X		X	X		X	X		Natural Resources Commission
Pesticide Use and Application	X	X		X			X	X	X	YES	X						X				Pesticide Review Board, State Chemist
Confined Feeding Lot Law and Guidelines		X								NO	X				X	X					Indiana Stream Pollution Control Bd.
Towns, Cities Enabling Legislation	X	X	X	X	X	X	X	X	X	N/A			X		X	X					Towns, Cities
Area Plan Commission	X	X	X	X	X	X	X	X	X	N/A		X	X			X	X				Area Plan Commission
Metropolitan Plan Commission	X	X	X	X	X	X	X	X	X	N/A			X			X	X				Metropolitan Plan Commission
Soil and Water Conservation Districts	X	X								N/A				X	X	X		X			Soil and Water Conservation Districts
Conservancy District Act - IC 71-19-3-2		X	X				X		X	N/A				X	X	X					Conservancy Districts
IC 16-1-5, 17-2-22			X							N/A	X	X			X	X	X				Local County Health Boards
Drainage Code 19-4-1	X	X								N/A		X					X				County Drainage Board, County Supervisors
Natural Resources Act	X	X	X	X	X	X	X	X	X	N/A	X						X				Natural Resources Commission, Department of Natural Resources
Draft Soil Erosion and Sedimentation Control Act	X	X		X						N/A	X				X	X		X			State Soil and Water Conservation Committee
Flood Plain Management Act IC 71-13-2-22-5								X		YES	X	X	X		X			X			Natural Resources Commission
IC 13-4-7 (Oil & Gas)						X				YES	X				X						Natural Resources Commission, Department of Natural Resources
County Enabling Legislation	X	X	X	X	X	X	X	X	X	N/A		X			X	X					Counties

'70

NOTES -- TABLE II

1. Land Use Categories -- See Chapter 2, for definitions and identification of the land use activities in each category. An X indicates that the land use category is addressed by the Act. It does not indicate the adequacy of authority or degree of implementation. See page reference for discussion.

2. Regulations Adopted -- Have regulations been adopted to implement the legislation? Symbols refer to:

   Yes -- Regulations have been adopted

   No -- Regulations have not been adopted

   NA -- Information not available or in case of Non-Statutory Control, not applicable.

3. Implementing Responsibility -- The key agencies and/or levels of government that have responsibilities in implementing the legislation. Specific agencies, municipalities and/or special districts are identified in the comments section.

4. Type of Control -- See Chapter 2, Section 3, for definitions of each type of control.

5. An X indicates that the category is addressed by the act identified, it does not identify the adequacy or degree of implementation.

71

SUMMARY OF ANALYSIS

INDIANA

TABLE III

LAND USE ACTIVITY	Magnitude of Problem	Current Activity	Staffing	Financing	Likely Future Activity	COMMENTS
Urban						
Site Runoff	M	L*	NI	NI	IP	See Text pgs. 25-35,59
Stormwater Runoff	UK	TR	NI	NI	L	See Text pgs. 35,59-60
Agriculture						
Pesticides	L	IP/EP	O	O	NO	See Text pgs. 36-37,60
Fertilizers	UK	NO	NA	NA	NO	See Text pgs. 37-38
Feedlot Operations	S	EP	O	NA	EP	See Text pgs. 38-40
Erosion From Farm Practices	M	L	NI	NI	L	See Text pgs. 41-44,60
Drainage	L	NO	NA	NA	NI	See Text pgs. 40-41
Liquid, Solid, Deepwell Disposal						
Solid Waste	UK	EP	--	--	NI	See Text pgs. 44-45
Liquid Sewage Sludge	L	TR/EP	--	NI	NI	See Text pgs. 45-46
Private Sewage Disposal	S	EP/L,R	--	--	L	See Text pgs. 46-48,60-61
Transportation Corridors						
Highway and Road Runoff	L	EP	NI	NI	NI	See Text pgs. 48-49
Railroad Runoff	L	EP	NI	NI	NI	See Text pgs. 48-49
Airport Runoff	L	EP	NI	NI	NI	See Text pgs. 48-49
Utility Rights-of-way Runoff	L	EP	NI	NI	NI	See Text pgs. 48-49
Shoreline Landfilling						
Land or Construction Excavation	NI	R	NI	NI	R	See Text pg. 49
Dredging	LI	R	NI	NI	R	See Text pg. 49
Extractive Operations						
Pits and Quarries	L	NO	O	NI	NO	See Text pg. 50
Mining	L	NO	NI	NI	NO	See Text pg. 51
Brines From Oil and Gas	L	NO	NI	NI	NO	See Text pg. 50
Recreation						
Runoff From Specific Activities	NI	NO	NI	NI	NI	See Text pg. 51
Pesticide Use	L	IP/EP	O	O	NO	See Text pgs. 51;36-37
Private Sewage Disposal	L	EP/L,R	--	--	L	See Text pgs. 51,46-48
Lakeshore and Riverbank Erosion						
Erosion	NI	NO	NI	NI	NO	See Text pgs. 51-52
Forest						
Timber Production	L	TR	NI	NI	NO	See Text pg. 52
Woodland Grazing	L	NI	NI	NI	NO	See Text pg. 52
Wildlife Management	L	NI	NI	NI	NO	See Text pg. 52
Recreation	L	NI	NI	NI	NO	See Text pg. 52

72

NOTES -- TABLE III

1. Magnitude of the Problem - The degree that the land use activity is reported to be a problem and/or perceived to be a problem by local or State officials. Symbols refer to:

   S -- Serious

   M -- Moderate

   L -- Low

   UK -- Yet to be determined

   NI -- Information not available

2. Current Activity - The land use activities where current activities are focused primarily at the State level. Activities of a major emphasis are noted with asterisks (*). The types of activity are:

   L -- Development of new legislation or improvements to existing legislation

   R -- Development of new regulations or improvements to existing regulations

   IP -- Implementation of incentive programs

   EP -- Enforcement of control programs

   TR -- Technical research is needed to determine the type of controls needed, if any

   NO -- No action

   NA -- Not applicable

   NI -- Information not available

3. Staffing - The adequacy of staff assigned to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- Too many staff resources applied

   0 -- An adequate amount of staff resources applied

   — -- An inadequate amount of staff resources applied

NA -- Not applicable

NI -- Information not available

4. Financing -- The adequacy of the financing appropriated to the implementation of legislation addressing the land use activity. Symbols refer to:

+ -- Too much financial assistance

0 -- Adequate financial assistance

— -- Inadequate financial assistance

NA -- Not applicable

NI -- Information not available

5. Likely Future Activity - The land use activities where there is likely to be future activity primarily at the State level. The types of activity are:

L -- Development of new or improvements to legislation

R -- Development of or improvements to the regulations

IP -- Implementation of new or improved incentive programs

EP -- Enforcement of new or improvement of control programs

NO -- No action

NA -- Not applicable

NI -- Information not available

74

Flood Control Act of 1973

Under the Flood Control Act the Natural Resources Commission has the ability to regulate construction activities by virtue of its authority to issue permits for construction in floodways or for the alteration of the bed or shoreline of public fresh water lakes.

According to law, it is illegal to erect, use, or maintain in or on any floodway a permanent residence or to erect, make, use or maintain any structure, obstruction, deposit or excavation in or on any floodway. It is also illegal to permit any structure, obstruction, deposit, or excavation that would adversely affect the efficiency or unduly restrict the capacity of the floodway, or would constitute an unreasonable hazard to life or property, or result in unreasonably detrimental effects upon the fish, wildlife, and botanical resources.[59]

If any person desires to erect a structure within the floodway or excavate within the floodway, he must submit a written application to the Commission setting forth the plans and specifications of the structure, excavation, etc. If the Commission believes that such a structure, obstruction, or excavation will not adversely affect the efficiency, unduly restrict the capacity of the floodway, or constitute an unreasonable hazard, it may authorize such construction or excavation. However, the Commission may incorporate into that authorization any conditions, restructions, or regulations that it deems necessary for the purposes of the Act.[60]

In addition, any works done for flood control in the State must, through the Commission, be coordinated in design, construction, and operation according to accepted engineering practice so as to effect the best flood control obtainable throughout the State. This means that no one may construct or install any works of any nature for flood control unless such proposed works and plans of specifications are approved by the Commission. In addition, no court can enter the final order or judgement establishing or ordering such work constructed without approval by the Commission. In analyzing flood control works, the Commission considers the same factors applied to construction in a floodway and may impose similar terms and conditions.

The administration of floodway construction permits is handled by the Division of Water of the State Department of Natural Resources with the approval of the NRC.

In administering and considering the approval of construction permits, the Commission is concerned with the questions of health and safety and with not jeopardizing the floodway area. It is the practice of the Commission to incorporate conditions providing for control of erosion and to specify conditions and mitigating measures on stream alteration projects for minimizing damage to fisheries, water temperatures, and wildlife habitats. In addition, those projects having impacts upon water quality are required, as a condition of the Commission approval, to secure the approval of the State Board of Health, Stream Pollution Control Board, or Environmental Management Control Board, as appropriate.[62]

Indirectly, the statute and implementation of the program acts to contain pollution from construction site runoff in floodways only.

Drainage Code

Under the Drainage Code, the County Drainage Boards have the jurisdiction and regulatory authority over any construction that takes place within 75 feet of any legal drain. The law further states that surveyors or the Board shall have the right of entry over or upon lands lying within 75 feet of any legal drain. The law also states that the owners of lands over which the right-of-way runs may use such land in any manner so long as it is consistent with the proper operation of the drain and the provisions of the act. Permanent structures may not be placed upon or over such rights-of-way unless the written consent of the Board is first obtained, but temporary structures may be placed upon or over such rights-of-way without such written consent. Temporary structures must be removed immediately by the landowner when so ordered by the Board or by the surveyor.[63]

If a legal drain is obstructed or damaged by an unauthorized structure caused by an owner of the land affected by the drain, the surveyor can order the owner to remove the obstruction and repair the drain. If the owner fails to do so within 10 days of the order, the surveyor will perform the work and the cost will be paid for out of the annual maintenance fund of such a drain if one has been established. If the obstruction or damage has been caused by acts of omission by the owner of the land affected by the drain, the Board, after a hearing, may add an amount sufficient to pay for the damage to the next annual assessment made against the lands of the owner. If the obstruction or damage is caused by the acts of omission by a person other than the owner of the lands affected by the drain, then the Board can institute a suit against that person in any court of competent jurisdiction and is entitled to recover the reasonable value of removing the obstruction and repairing the damage plus a reasonable attorney fee for the Board's attorney.[64]

The various county drainage boards have the authority for maintaining the legal drains within each county. (In Marion County this authority is with the Board of Public Works.) Their primary concern is to see that the drains are kept clear to allow for proper movement of water. They are also concerned with the repair of damaged drains and the removal of dangerous obstructions.[65] The Board's authority to restrict construction could act to reduce sedimentation entry into these drains from construction site runoff and keep them clean.

76

Plan Commission Authorities

Under the law various types of planning commissions have the power to regulate the land uses and types of structures built. These powers could act to abate the water pollution caused by construction sites.

Metropolitan Plan Commissions for Counties, and Area Plan Commissions for Cities, Towns and Counties Cooperatively. The general authority of Metropolitan and Area Plan Commissions stems from IC 18-7-2. The Plan Commissions create and recommend to the city or county council a zoning ordinance or ordinances that, among other things, assures that the public health, safety, comfort, morals, convenience, and general welfare may be promoted. In addition, the ordinances can regulate the use and intensity of use of land and lot areas and can classify, regulate and limit the height, area, bulk and floor space of structures in the area surrounding the structures.

The ordinances can also provide for performance standards. However, there is no specific reference in the law that suggests specific regulations on the actual construction practices on zoned land.

The Metropolitan or Area Plan Commission must recommend a subdivision control ordinance to the city or county council for adoption. The ordinance specifies the standards by which the commission shall determine whether a plat qualifies for approval and must contain among other details standards on minimum width, depth, and area of lots within the subdivision; standards for the classification of use, height, area, bulk, and floor space of structures in the subdivision; and the standards for the extension of facilities and municipal services.

Any provision of the zoning ordinances may be appealed to a board of zoning appeals.

All Primary zoning ordinances may incorporate standards and regulations of the Public Health Department of the county, and require conformance to applicable State laws and regulations. The subdivision regulations require plats to conform to all the above public health standards, and address such subjects as stream pollution and resource conservation.

77

Advisory Plan Commissions for Cities, Towns, or Counties Individually. The law outlining the authority of Advisory Plan Commissions states that a city or county Plan Commission will adopt a master plan, and in turn, the city or county council will adopt an ordinance to enforce the master plan. This ordinance will include provisions for subdivision control and a method of plat approval through review by the Plan Commission. Once the master plan ordinances are adopted, any subdivision of a parcel of land for purposes other than agricultural use is reviewed by the Plan Commission, and a determination is made of the subdivision's accordance with the master plan.

In reviewing and approving plats, the Advisory Plan Commission law limits the condition of approval to the layout of streets, graded and improved, water, sewage, other utilities, schools, essential municipal services, and recreational facilities. It appears that not much opportunity is allowed for applying conditions of construction upon the plat. The ordinance can designate the authority to an official or employee of the city or county to issue local improvement permits within the jurisdiction of the Commission as long as they conform to the master plan and ordinance. Finally, there is the establishment of a board of zoning appeals system.[66]

The legislative authority granted by the State of Indiana outlines a system of comprehensive plans, ordinances, and permits. There is nothing directly within the statutory authority that relates these efforts specifically to the actual regulation of construction practices in response to water quality needs. The current legislation is broad enough legally to enable Plan Commissions to regulate construction activities for the purpose of water quality.[67]

Basic Enabling Legislation for Cities, Towns and Counties

Through their enabling legislation cities, towns and counties have the authority to adopt ordinances that could require erosion and sediment plans for land disturbing activities in their subdivision control plans. Their subdivision control and land development ordinances are enforced through building permits. The contractor did not identify any local communities in the Great Lakes Basin that had passed and implemented a local construction site ordinance.

Evaluation

It appears that various agencies and boards do have the authority to control site runoff. In Indiana, however, they focus their efforts on problems other than on strict water quality concerns. As a result any actions taken by these groups only indirectly impact pollutions caused from site runoff.

It should be noted that in the interviews with State and local people construction site runoff was not described as a serious water quality problem.[68] Few, if any, complaints have been received by the Division of Water Pollution Control, ISBH, on pollution from site runoff.[69]

Currently there is a proposed bill before the State legislature known as the Soil Erosion Sediment Control Act that would specifically allow for the control of construction activities. The bill calls for: (1) the establishment of a comprehensive erosion and sediment control program, (2) the development of guidelines which would set forth erosion and sediment control practices, and (3) specifications which, when properly applied, will reduce soil loss to the tolerated amount for both urban and agricultural areas.

The proposed bill also requires that plans be approved before any land disturbing activity can begin. The existing State Soil and Water Conservation Committee and the local SWCD's would be responsible for implementing the Act. This would change the role of the local SWCD from an advisory organization to a regulatory one.

3.3.1.2 Stormwater Runoff

Magnitude of the Problem

The primary stormwater problem in Indiana involves combined sewers.[70] Combined storm/sewage systems do not possess the capacity to treat the increased loads generated during periods of increased stormwater runoff, thus causing significant overflows of raw, untreated sewage mixed with urban stormwater runoff into streams without treatment.[71]

Little data is available that adequately describes the severity of this pollution problem in Indiana.[72]

Current Activity/Evaluation

The final determination of the methods to solve the stormwater runoff problem has not yet been made. Consequently, no effective controls have been developed.[73]

Most agencies are busy trying to develop acceptable technical solutions to the problem. It has been recommended that additional research on the issue, especially sampling data, be part of the on-going 208 plan.[74]

The State does require that in all new subdivisions, stormwater and sewage systems be separated.[75]

There are a few urban areas that have separate stormwater systems. About a half-dozen cities treat combined stormwater flows and then only in portions of the area. Some limited work on storm sewer separations has been completed in Hammond and Fort Wayne.[76]

3.3.2 Agricultural Areas

3.3.2.1 Pesticides

Magnitude of the Problem

Research indicates that the application of pesticides could have a potentially adverse effect upon animal and plant life in both aquatic and land ecosystems. However, because of the beneficial role pesticides can play in controlling harmful pests, there has been a reluctance to ban pesticides outright.[77] The application of pesticides in Indiana has had a low level of effect in harming the environment as far as has been determined.[78]

In 1970, 7,714,000 acres of farmland were treated with pesticides in Indiana. Four million, four hundred sixty four thousand acres of the land were treated for growing corn (86% of the crop), 2,350,000 acres were treated for growing soy beans (71% of the crop) and 900,000 acres were treated for growing hay. It is estimated that there are approximately 117,000 applicators. This includes 107,000 farmers who may, at some time, require a license and 10,000 commercial applicators.[79]

Approximately 2,200 commercial applicators and 20,000 private applicators are currently licensed. The licensing laws just recently came into effect and consequently a significant number of applicators have yet to be licensed. The implementation of a training program to certify applicators and their eventual licensing is of an immediate concern to the State.[80]

Current Activity

In 1971 Indiana passed the Pesticide Registration Act (IC 1971 15-3.3.5) which establishes the duties and responsibilities of the Indiana Pesticide Review Board and the Indiana State Chemist. The Act additionally requires the registration of all pesticides distributed, sold, transported, and applied in the State of Indiana and provides the authority to restrict their use. To date the only pesticide banned by the State for agricultural use other than those banned by EPA, is high volatile phenoxy herbicides.

In 1975 Indiana adopted the Pesticide Use and Application Act (IC 1971 15-3.3.6) which requires any person applying or supervising the application of pesticides to be licensed. The State Chemist is responsible for prescribing standards for certification and issuing operators licenses. The Pesticide Review Board is responsible for developing regulations with regard to the transport, storage and disposal of any pesticide or pesticide container. Regulations have been drafted that establish several categories of licenses and the requirements for obtaining a certificate. They also detail information required for recording purposes.

The State Chemist's office has developed a pesticide applicator training program to train and certify farmers who must be licensed. The program details the personnel involved in carrying out the State Plan in each agency, estimates the income of the program for a one-year period, categorizes and

80

estimates the number of commercial applicators expected to be licensed and/or certified, lists the general standards for all categories and subcategories of certified commercial applicators, lists the testing procedures, lists the materials to be used, and discusses plans for future courses. The Indiana Extension Service has primary responsibility for conducting the courses.

The Indiana State Board of Health is developing a pesticide container disposal program. The program is to be coordinated with the policies and recommendations of the Indiana Pesticide Review Board and the Office of the State Chemist.[81]

Evaluation

Indiana's regulatory practices with regard to the restriction of the sale, distribution, application of pesticides are not written specifically to prevent deterioration of water quality, nor are the statutes written to regulate the disposal of containers and excess pesticide materials. Nevertheless, the control of application and location, as well as amount of pesticide to be employed affect the impact of pesticides on water quality.

There appears to be adequate staff to enforce the provisions of the Act. The State Chemist has four full-time field inspectors and 12 others who devote part of their time to enforcement. Cooperative Extension agents aid applicators in each county.[82] Inspectors both routinely inspect applicators' operations and respond to complaints.

Interviews with State and local officials reveal that the State has developed a very good training program for farmers to receive their certificates to become licensed. The program has been well accepted by the farmers. Many people feel that the program will serve as a model for the nation on a pesticide applicator's licensing and certification program.[83] The head of the State Chemist's office aided EPA in establishing the Federal Pesticide Regulations.

3.3.2.2 Fertilizers

Magnitude of the Problem

Various nutrients have different effects on water quality.

Agricultural land is estimated to contribute approximately 20 percent of the total phosphorous loading in the Great Lakes and approximately 30 percent of that contributed by tributaries to the Great Lakes. Unfortunately, sufficient information is not available to compute the proportion of nitrogen loadings contributed from agricultural lands although it may be similar to the amount estimated for phosphorous.[84]

Not only is there a lack of information concerning the exact characteristics of fertilizers and other nutrients but technical solutions which would limit the effect on water quality as the time of year and best methods of application have yet to be determined.[85]

There is also a problem in attempting to regulate thousands of individual users of fertilizers and other nutrients. In Indiana alone with more than 200,000 farms, developing regulations, monitoring, and control practices guiding nutrient applications are not feasible given limitations on available funding and manpower. Another problem with application control and use is that the water quality problems vary from site to site.[86]

Current Activities

Use of fertilizers is not legally regulated. In fact the only control on fertilizers is in the labelling as to use. Soil tests and advice on application rates is available through the fertilizer dealers and Purdue University cooperative extension offices in each county. Farmers generally retest to determine application rates every two or three years.[87]

Evaluation

Because the impact of fertilizers in relation to time and method of application is unknown, few regulations have been developed to limit their effect on stream and groundwater quality. It was suggested that nutrient effects on water quality could be limited by implementation of better management practices, such as soil erosion and control programs.[88] Officials estimate that better education and the increasing costs of fertilizers will decrease the volume of over-application.[89]

3.3.2.3 Feedlot Operations

Magnitude of the Problem

Intensive animal feedlots have posed serious problems to water quality in Indiana. In the past they have contributed sizeable loads of nutrients and animal wastes to streams which resulted in extensive fish kills.[90]

Today there are 2,140 known confined feedlot operations in Indiana, of which 817 come under the provisions of the Indiana Confined Feeding Control Law by virtue of having numbers of livestock greater than those specified (300 cattle, 600 swine, 30,000 fowl). For the 817 operations, which fall under the law, there are 70,700 cattle, 1,070,000 swine and 12,350,000 fowl operations. Eleven of the intensive feeding operations are classified as point sources and have been issued an NPDES permit.[91] The law also applies to any size feedlot that is found to be polluting a stream.

Current Activity

Until 1971 intensive feedlots in Indiana were regulated through general water quality statutes and regulations. When the Indiana Confined Feeding Control Act (IC 13-1-5, IC 13-1-7) was passed in 1971, intensive animal feedlots could be regulated by the State, depending on the size of the operations and the severity of the problem they were causing.

The Stream Pollution Control Board became ultimately responsible for approving all permits to operate confined feedlots. Under the Act an applicant for a permit is required to submit to the board various materials, including an application; plans for waste treatment and control facilities; and other information regarding, but not limited to, general features of topography, soil types, drainage courses, and the identification of the nearest receiving stream. Approval to construct or operate the confined feeding operation is granted if the water pollution control proposal is satisfactory.

A specific requirement of the statute is that all wastes must be land applied. In evaluating permit applications, the Indiana Stream Pollution Control Board takes a special interest in the: (1) storage of wastes and runoff water, and (2) spreading of wastes. Storage pits are required to be of sufficient size to provide a minimum of 90 days storage of animal wastes, contaminated runoff, and wastewater generated by the operation. In regard to the spreading operation, sufficient land must be available for spreading a 90-day accumulation of wastes, using adequate waste hauling and land application equipment; and the wastes must be spread within 18 days.[92]

The Board may disallow continued operation of confined feeding operations that cause violations of stream standards or other regulations through a specified procedure. The Board may seek injunctive relief as it deems necessary under the circumstances. In addition, violators of any provision of the Act or the regulations adopted by the Board under the Act may be prosecuted for a misdemeanor. Fines may be imposed upon those found guilty.[93]

Guidelines for handling concentrated feeding operations for dairymen, poultrymen, swine producers and beef producers, which conform with the State statutes, were formulated by Purdue University and widely circulated to the farmers in the State. On the local level the farmers were assisted in applying these guidelines by the Agricultural Stabilization and Conservation Service REAP Program, which helped develop operational plans for concentrated animal areas. Reference to these guidelines can be found in Part II.

The Bureau of Engineering, State Board of Health, provides technical and administrative services for the SPCB. Within the Water Pollution Control Division, the responsibility for reviewing confined feeding control plans is vested in the recently reorganized Permits and Approvals section of the Enforcement Branch. Specifically, review, inspection, and approval activities are carried out by the Land Application Group which currently consists of four staff positions. The supervisor and two staff people spend approximately 60 percent of their time on the review of confined feeding control plans. The rest of their time is devoted to reviewing plans for land application of sludge and other wastes from industrial and municipal activities. Complaints and follow-up inspections are handled by the Facility Inspection Section of the Enforcement Branch of the Division of Water Pollution Control. This staff includes a chief and about 13 inspectors. For the fiscal year ending June 30, 1975, 283 plans for confined feeding were received by the SPCB; 271 plans were approved. Local involvement is limited to the extent that a local health department wishes to provide assistance.

The Indiana General Assembly authorizes the number of positions for the Bureau of Engineering at the division level. Staffing for the various sections in each division is determined by the priorities set for that division. Funding is appropriated by the Indiana General Assembly.[94]

Evaluation

Because of SPCB responsibilities under NPDES and other EPA requirements, resources have been reduced for the enforcement of the Confined Feeding Control Law. Whereas six employees formerly reviewed only confined feeding control plans, three persons presently perform all land application plan reviews, including confined feedlots. A backlog of applications has developed as a result. Routine inspection and monitoring programs are not possible; furthermore, because of limited staff resources, it is estimated that only some 20 percent to 50 percent of operators required to submit plans have complied with the law.

The success of the program is dependent upon the willingness of confined feedlot operators to comply with the law on a voluntary basis. Operators find that they must comply with the law if they apply for cost-sharing funds through their SWCD's to construct waste facilities.[95]

3.3.2.4 Drainage

Magnitude of the Problem

Most of central and northern Indiana is flat. At the time of settlement the land was marshy. The land was later drained for farming. Currently drainage in agricultural areas is not considered a water quality problem.[96]

Current Activities and Evaluation

County Drainage Boards under the Drainage Code have the authority to control and regulate changes within the drainage area (new development) which can alter drainage characteristics. Boards can also require developers to help pay for enlarging the drainage system or require storage and controlled release of surface drainage. Some of the county drainage boards now require erosion control practices such as bank seedings and erosion control structures on their projects. This is particularly true where Rural Environmental Assistance Program cost-share funds have been utilized for the erosion control practices on group drainage projects.[97]

However, the intent of the code was to drain wet agricultural land. Any other effects that act to limit the deterioration of water quality are indirect.

Towns, cities, counties, and planning commissions all have a variety of powers which allow them to regulate land uses and types of structures built. These powers may also directly act to prevent deterioration of water quality caused from drainage.

Soil and Water Conservation Districts have the authority to help solve and prevent problems caused from drainage, through their provision which requires an erosion control plan for the development of a site. Drainage practices are a factor considered when approving a plan for development.

3.3.2.5 Erosion from General Farm Practices

Magnitude of the Problem

Soil erosion from runoff waters across land can cause sediment to be deposited into streams resulting in a variety of adverse effects to the quality of those streams. Sediment can result both from agricultural run-off as well as urban construction site runoff. It is the greatest single water pollutant from agricultural activities, while research has indicated that sediment production from eroding construction sites can easily produce ten times the soil loss from cropland.[98] Soil loss from erosion and sedimentation is considered a moderate problem in Indiana. The problem is more acute in areas where land uses are shifting from agricultural activities to urban and suburban ones. In those areas a considerable amount of land is owned by speculators who have little or no interest in best farm management practices or for that matter any kind of sediment control that might increase their expenses.[99]

Current Activity

In Indiana there are 17,500,000 acres of farmland, of which 11,000,000 acres are harvested and 1.5 million acres are in pasture. The remainder is either wasteland, wood lots, etc. Approximately 40% of the tilled acreage (4,400,000 acres) is under voluntary SCS/SWCD land management plans, which include sediment control measures.[100]

Currently there are no laws or regulations specifically directed at sediment control. However the SPCB can, as part of its responsibilities, demand that certain activities take measures to insure that sedimentation loads will not adversely affect water quality. In requesting such procedures, no specific requirements or specifications have been established. A Soil Erosion and Sediment Control Act has been drafted. It will be discussed later in this section.

85

Sedimentation control is also provided by the Soil Conservation Service, which advises counties and farmers to adopt their guidelines and procedures. The SCS does not have enforcement or regulatory powers. The emphasis is on voluntary compliance only. The SCS has offices in all counties except one, which is served from the adjacent county. In addition, county extension agents in each county are available to provide a link between Purdue University and local farmers. Staff levels vary from county to county.

In Indiana the Allen County Soil and Water Conservation District, in cooperation with the U.S. EPA, the U.S. Department of Agriculture, and Purdue University's extension program, has been developing plans for erosion and sedimentation control to limit the environmental impact of land uses on surface water areas in Allen County and the Maumee Basin.[101]

Besides the SPCB there are two special purpose districts that have non-regulatory authority to abate water pollution caused by erosion. They are the Soil and Water Conservation Districts and Conservancy Districts.

SWCD's are authorized under the Soil and Water Conservation Districts Act (IC 13-3-1) with a variety of planning and program implementation powers. They are responsible for carrying out conservation measures within their areas. They may adopt control measures that include engineering operations, improved cropping practices, seeding and planting of eroded lands, afforestation, soil stabilization, and runoff retardation. However, these measures may only be initiated upon the consent of the landowner or occupier of the land.

SWCD's are also responsible for developing comprehensive plans for resource conservation. They may advise land developers on building controls or put into operation practices to reduce soil erosion associated with construction. They may also make recommendations on drainage, flood hazard, and steep slope construction. SWCD participation and approval of development plans are not required by local planning and zoning commissions for construction permits to be granted.

The Conservancy District Act OIC 19-3-2) authorizes the creation of Conservancy Districts for one or more of the following purposes:

- Flood control
- Drainage
- Irrigation
- Water supply
- Sewage
- Recreation
- Soil erosion.

Under the Act, Districts are given the opportunity to regulate water pollution caused by solid and liquid wastes, drainage, soil erosion, as well as other activities by means of the district plan in which new drainage facilities for disposal of liquid waste and sewage are planned. The plan should include a description of the physical nature of the District's maps, works of improvement needed, and the location of such works.

Districts also have the power to make all necessary rules and regulations.

Local governmental units additionally have the authority to pass their own sediment control ordinances.

As mentioned previously there is a bill before the State legislature (Soil Erosion and Sediment Control Act) that would provide soil erosion and sedimentation controls for agricultural areas as well as urban areas.

The proposed legislation would authorize and direct the State Soil and Water Conservation Committee to develop and coordinate a comprehensive State erosion and sediment control program. The Committee would also be responsible for establishing minimum soil losses to be tolerated as standards for disturbing activities and critical erosion areas and set guidelines that detail erosion and sediment control practices. The bill requires everyone engaging in a land disturbing activity to submit a plan for erosion and sediment control. The Soil Conservation Districts would review all plans at the local level with the State Soil and Water Conservation Committee acting as a review board and having final determination over their implementation. Upon approval the applicant would be issued a permit. The bill also allows for on-site inspection and filing of periodic reports, as well as setting up the possibility of fines or imprisonment for violation of soil conservation plans and procedures issued by the Committee.

Under the bill, the Committee would also establish a priority system for distribution of funds to enable districts to provide cost-sharing assistance and employ staff necessary for planning and program administration.

Evaluation

In Indiana SWCD's have generally developed close working relationships with those who wish to cooperate with district programs. The SCS is the only agency which can provide direct conservation assistance to remedy an individual's soil erosion and sedimentation problems. To receive Federal cost-sharing funds, landowners must cooperate with the SWCD's for proper planning. In recent years Federal cost-sharing funds through the Rural Environmental Assistance Program have been reduced. This has forced ASC committees to eliminate some conservation practices from the county's priorities. This reduction has somewhat reduced the incentives to apply conservation practices since competition for funds is very high.

It should be emphasized that the SWCD is not a regulatory district. Success of SWCD programs to conserve soil and water resources rests with the cooperator's interest and willingness to carry out the recommended practices.

The result has been that much progress has been achieved toward conservation objectives. However, some of the worst soil and resource problems caused by landowners and operators who are not interested in these objectives are not solved.[102]

Earlier efforts at promoting the Soil Erosion and Control Act have been unsuccessful. However, the current effort is given greater chance to pass if the controls are keyed to cost-sharing techniques available to landowners.[103]

Currently, no conservation district has been formed to control soil erosion, and no local government in the Great Lakes Basin part of the State has exercised its authority to pass a local ordinance.[104]

3.3.3 Liquid, Solid and Deepwell Disposal

3.3.3.1 Solid Waste

Magnitude of the Problem

The influence of solid waste disposal on water quality is undetermined due to the lack of extensive information on the influence of leachates.[105]

Problems that have arisen center on the selection of sites for landfills.

Current Activities

There are 132 public landfills, 20 dumps, and 100 known industrial onsite landfill operations. All public landfills (132) are licensed. Approximately 3,270,000 tons of refuse were deposited in public landfills last year. This equates to 13,068,000 cubic yards.

The Refuse Disposal Act (IC 19-2-1) bans all non-landfill sites. The Act stipulates that the disposal of refuse must be made by sanitary landfill or by means of incineration, composting or other methods acceptable to SPCB. Counties, cities, and towns are all made responsible for solid waste disposal operations (construction, acquisition, installation, operation and maintenance). However, the Stream Pollution and Control Board has the final approval of permits for construction and operation of landfill facilities (SPC-18, Regulations on Solid Waste Permits). The SPC-18 Regulations on Solid Waste Permits establishes standards for approving refuse processing and disposal facilities. Toxic materials, oils or other highly organic materials cannot be disposed of at landfills without proper procedures. All landfill regulations apply to both public and private operations.

The facilities are inspected approximately six times a year.

There are 13 staff positions assigned in the Solid Waste Management Section, Indiana State Board of Health, to implement this program. All devote 100% of their time to this effort. Local health departments provide an undetermined effort in inspections and complaints.[106]

Regional Water/Sewer Waste Districts have the authority, under the Regional Water/Sewer Solid Waste District Act to address solid waste problems. Under the Act, the Districts are authorized to finance, construct and operate waste collection and treatment facilities. However, few, if any of the Districts are currently active in this area. Most Districts' activities have focused on bringing sewage treatment services to unincorporated areas.[107] Planning Commissions, through preparation of master plans, have a degree of control over subdivisions, and the enforcement of the master plan although zoning ordinances have input into water quality management.

Evaluation

According to the interviews with State and local officials, the Refuse Disposal Act (which requires the licensing of sanitary land and prohibits open dumps) provides the legal authority to adequately control solid waste disposal operations.

Adequate landfill sites are limited in Lake County and open dumps and leachate problems are of great concern.[108]

3.3.3.2 Liquid Sewage Sludge

Disposal of liquid sewage sludge and industrial waste is considered a significant problem in Lake County. Much illegal dumping into waterways occurs.[109]

Current Activity

Currently there are no specific guidelines or standards formulated for application of liquid sewage sludge, especially with regard to applying heavy metal concentrations on the land. However, haulers are controlled. Under the Stream Pollution Control Board regulation SPC-17, industrial waste haulers must be licensed and report their activities. The control and licensing of residential waste disposal on land is in the formative stages due to limited technical data on application rates and loadings.

The City of Indianapolis plans to dispose of stored sludge in lagoons on farmland in an adjacent county.

There is no inventory of sludge disposal sites at this time. This is to be accomplished under the State 208 planning effort.[110] Industrial land disposal sites are required to have a permit and submit monthly reports that describe the flow and composition of wastes to the State's Stream Pollution Control Board.

Evaluation

There has been little, if any, enforcement of the industrial waste hauler program. The problem is due to the lack of staff at the State level, not the lack of authority. The absence of technical information with regard to the application of liquid wastes, especially municipal wastes, has contributed to the lack of regulations as to the application methods, monitoring, inspection procedures and construction site requirements.[111]

3.3.3.3 Private Sewage Disposal

On-site sewage disposal or septic tank systems are said to be Indiana's biggest non-point source of water pollution.[112] In 1970, it is estimated that there were 458,000 households not served by a municipal type of sewer system. These households are served by septic tank systems, sand filters, privies, etc., or no systems at all.[113]

Various areas in the State have experienced rapid growth. In some of these areas, sewer systems have not been available. This has lead to heavy reliance on septic tank systems.

The effect of this widespread application of septic systems for suburban and exurban development upon areawide water quality has not been adequately identified or measured as the analytic techniques have not been developed. However, the owners of malfunctioning systems, their neighbors and public officials who frequently are the recipients of complaints know there is a water quality problem in the backyard.[114] This situation has been compounded when septic tank systems have been installed in areas with soils that exhibit poor drainage, and a high water table, or when improperly installed and maintained.

Current Activities

In Indiana, the regulation of private sewage disposal systems or septic tank systems is a power and responsibility of the local county health boards with the exception of Marion County/Indianapolis where the power and responsibility are vested in the Health and Hospital Corporation.

More specifically, under IC 16-1-5 the State of Indiana General Assembly is authorized to establish county health boards and prescribe their powers and duties. IC 17-2-22 gives county boards of commissioners the power to adopt ordinances for the general purpose of protecting the public health and to adopt procedures for the control of private sewage disposal systems.[115]

The individual septic tank systems are approved and inspected by local health departments. They are inspected at the time of construction and probably only upon receipt of complaints thereafter. It is not known how many are installed each year. In suburban growth counties, much of the new housing is occurring in areas unserved by sewer systems. No inspection or enforcement of such systems is attempted at the State level. This is done by local health departments which, in high growth areas, may spend 50 percent of their time in this area. Most county health departments have at least one full-time sanitarian.[116]

The State Board of Health plays an advisory role to county governments in the regulation of private sewage disposal systems. The SBH, Division of Sanitary Engineering has prepared two bulletins which provide planning guidelines for the design and use of on-site disposal systems:

- S.E. 8 - "Septic Tank Sewage Disposal Systems for Farms and Suburban Homes"
- S.E. 13 -- "Planning Guide for Water Supply and Wastewater Disposal for Small Public, Commercial, and Place of Employment Buildings"

These bulletins are revised and updated periodically and provide recommended minimum standards and requirements for systems approved at the county level. The recommended standards are advisory in nature rather than mandatory. SBH also distributes a model ordinance for private sewage disposal systems which has been adopted in modified form in many counties throughout the State. Local ordinance improvements have included requirements for subsurface drainage, large lot sizes, extensive evaluation of soils data, larger minimum tank size, increased amount of finger systems, and coordination with building permit procedures.[117]

As several counties in Indiana have never adopted septic system ordinances, the SBH has drafted a regulation to be enacted by the Executive Board of the State Board of Health to mandate minimum standards for septic tank regulation Statewide. The draft regulation is currently being circulated for comments and is being revised. Its promulgation would follow established administrative procedure which requires the following actions: preliminary adoption by the SBH Executive Board, authorization of public hearing, public hearing, revision and final recommendations to Executive Board for final adoption, Attorney General review and approval, and certification. The SBH initiative is also partly a result of a sample of effluent drawn from 2,000 septic tanks throughout the State. Analysis indicated that all effluent samples were unacceptable. The proposed regulations establish standards for the design, construction, location, maintenance and operation of septic tanks. They also describe detail methods for evaluating a site's suitability. SBH also administers a licensing and permit system for septic tank cleaning businesses under the authority of the Septic Tank Cleaners Law.[118]

Evaluation

The control of septic tank systems varies greatly from county to county with widely varying ordinances, standards and effective administration. The main factor causing pollution problems as a result of septic tanks is that there are definitely soils in which they will not work due to inadequate soil percolation. In spite of this, such systems are installed due to pressure from developers or a reluctance to say no. A State regulation on on-lot sewage disposal is in the promulgation stage. However, in light of the fact that there are no local planning and building regulations in some counties the potential for water pollution from private sewage disposal systems appears to be a significant problem to be addressed.[119]

The County Health Departments are generally poorly funded and have minimum staff resources to administer a thorough and rigorous regulatory program for septic tank systems. Previously, Federal funds have been given to States which allocated the monies among the counties for public health purposes. These funds are no longer available and the local health departments are highly dependent upon local tax revenues, fees collected and budget appropriations from the County Council.[120]

Since the operating budgets for county health departments are controlled by the County Council and the Sanitarian job is appointive, the administration of the regulatory program is subject to political influence or pressures. And while professional sanitarians are licensed according to a set of standards, it is not required that the position of "County Sanitarian" be filled by a professional sanitarian. Furthermore, the education of a prospective homeowner as to the care and maintenance of a septic system is virtually nonexistent. While systems are to be kept in good repair, there are no means to implement this provision of the ordinance in an effective manner.[121] The overall effect of the regulatory program for septic tanks is one of great unevenness -- some counties have no specific ordinances, some counties have adequate ordinances but uneven implementation and administration, still other counties have good ordinances but inadequate staff resources.[122]

3.3.4 Transportation Corridors

Magnitude of the Problem

Transportation effects water quality through runoffs to surface water from highways and airports, oils and salts leaching into adjacent soils, herbicidal applications along roadside and railroad sites, and accidental spillage of materials. Certain forms of solid waste such as litter or debris are also found near highways and railroads, but nutrient loading is seldom an important runoff from transportation.[123] Indiana is considered to have a low level problem with regard to non-point pollution impacts of water quality resulting from transportation systems.[124]

92

Current Activities and Evaluation

At the State level, the general regulations controlling pesticides, sedimentation and herbicides are the only requirements that apply to nonpoint source aspects of highways, railways and airports.

In the last five years the following number of miles of Federal and State highways have been constructed: 1976 -- 255 miles; 1975 -- 160 miles; 1974 -- 83 miles; 1973 -- 90 miles; 1972 -- 178 miles.[125]

All State roads and county roads which receive Federal funds provide for control of runoff and erosion set by DOT specifications. These specifications are enforced by resident inspectors employed by the State. According to the State Highway Commission, these specifications have resulted in a dramatic reduction in erosion from construction.

There are 140 public use airports in the State. Only those subject to FAA approval (60) must comply to runoff controls.[126]

3.3.5 Shoreline Landfilling

Magnitude of the Problem, Current Activities and Evaluation

There was little information available with regard to the effect of shoreline landfilling on water quality in Indiana. At the State level, the Flood Control Act provides the Natural Resources Commission with some authority to control dredging and land excavation activities through its permit program.

The Commission, in issuing the permits, may make them subject to restrictions or conditions on alteration of streams so as to minimize the disturbance to streams and stream quality. The administration of floodway construction permits is handled by DNR, Division of Water Quality with the approval of the Commission. The Act requires periodic on-site inspections and reporting.

The Act further stipulates that any person erecting, using or maintaining, in or on any flood plain area, a permanent residence must have a permit. The Commission is also required to make a comprehensive plan for flood control areas.

The Commission is empowered to cooperate with the Army Corps of Engineers with regard to any flood control works. Currently both a Federal and State permit are required for any construction, excavation or alteration in floodway. There are discussions currently being held to institute a one-permit system.

93

3.3.6. Extractive Operations

3.3.6.1 Pits and Quarries

Magnitude of the Problem

Pollution problems from sand and gravel quarry operations are minimal.[127]

Current Activities and Evaluation

There are approximately 190 sand and gravel operations in Indiana. Permits are not required to engage in sand and gravel and quarry operations except when those operations are located within a floodway. In those cases, permits issued by the Division of Water, DNR, are required. The intent of the law is to maintain flood flows and protect aquatic and wildlife during construction or operation periods.

Discharges from sand and gravel operations, quarries and mines must be approved by the SPCB. Little staff is necessary to obtain compliance with the law.[128]

3.3.6.2 Brines from Oil and Gas

Magnitude of the Problem, Current Activities and Evaluation

The major activity with regard to oil and gas wells occurs in Southern Indiana. In the State, there are 8,621 oil and gas related wells. They are broken down as follows: 4,891 oil wells; 563 gas wells; 1,802 water flood wells; 198 salt water disposal wells; 171 gas input wells; 730 gas storage wells; 172 gas storage observation wells; 94 portable water wells, and 367 non-operating wells.[129]

IC 13-4-7 requires any person, before engaging in operating an oil and/or gas well, to obtain a permit. The permits pertain to the proper and safe operation of the well. The permits are issued by the Division of Oil and Gas, DNR.

Additionally, the Division is responsible for establishing standards for the spacing between wells.

The Act also requires that abandoned wells be plugged, capped or filled to prevent seepage of ground and surface waters into wells and the backflow of fluids from wells into surface water. Regulations have been adopted detailing abandonment requirements, gas storage application procedures for obtaining drilling permits, spacing and drilling unit requirements.

Oil and gas wells are inspected during new drilling and plugging operations, prior to abandonment, during construction of new pits and upon receipt of complaints. The Division of Gas and Oil has eight full-time field inspectors.

94

3.3.6.3 Mining

Magnitude of the Problem, Current Activities and Evaluation

There are 70 active strip mines in the State.[130] A permit must be obtained before any person may engage in strip mining activities. To obtain a permit, an applicant must submit a reclamation plan. The permits are issued by the Division of Land Reclamation, DNR.

Under the law (Indiana Stat. Ann. 46-1501), backfilling and grading of strip and surface mining areas is required. Additionally, peaks and ridges must be graded when adjacent to public highways and dams.

Bonding is required to insure reforestation and revegetation for sediment control. Mines are inspected after the area has been mined and restored. The bond is released at this time if the area is satisfactorily reclaimed. The Division of Reclamation has six full-time inspectors in the proximity of the mining area in southwestern Indiana.[131]

3.3.7 Recreation

Magnitude of the Problem, Current Activities and Evaluation

There has been no detectable degradation of land and adjacent waters caused from recreational land uses. Existing laws and standards regulating sedimentation, pesticides, animal feedlots and herbicides can provide controls. The only regulation we are aware of controls campgrounds (HSE 24). The development of regulations regarding recreational activities is not a high priority issue compared to other land use activities affecting water quality.

With regard to pesticide use, refer to the section on agricultural areas. The same restrictions on licensing, use and application applies to pesticide use in recreational areas. With regard to private sewage disposal, the same authorities and restrictions apply in recreational areas as found in the section on solid, liquid, and deepwell disposal.

3.3.8 Lakeshore and Riverbank Erosion

Magnitude of the Problem, Current Activity and Evaluation

There are two pieces of legislation that allow for the regulation of lakeshore and riverbank erosion in Indiana. They are the Flood Plain Management Act, P.L. 123 Act of 1973, and the Flood Control Act, Chapter 318, Acts of 1945 as amended by P.L. 122.

Under the Flood Plain Management Act the Department of Natural Resources is authorized to control lakeshore and riverbank erosion. DNR is primarily concerned with flood control work and any impact on water quality management -- i.e., control of sediment from construction is indirect.

95

The Natural Resources Commission assists local governmental units in identifying and delineating flood hazard areas and aids in preparing and implementing a Statewide flood plain management program. The Act gives local governments (cities, towns, counties, regional commissions) the authority to pass flood plain management ordinances. The Department has set up guidelines for ordinance development. DNR must approve each local ordinance. They cannot force a local jurisdiction to pass an ordinance, however, a local government entity is only eligible for the Flood Insurance Program if it has passed a flood plain management ordinance.

Rule Number FPM-1, which implements the Act, establishes the minimum standards for delineation and regulation of all flood hazard areas, creates Floodway Districts and Floodway Fringe Districts, and stipulates the kind of uses which do not require a permit for construction in their floodway.

The Flood Control Act provides the Natural Resources Commission with the authority to regulate non-point sources of pollution resulting from lakeshore and riverbank erosion through the Commission's power to adopt rules and regulations with regard to alteration of natural or present water courses and administer a permit program. Any persons engaging in erecting, using or maintaining, in a floodway, a permanent residence, deposit or excavation must have a permit. The Commission also has the power of eminent domain under the Act.

With regard to planning activities, the Commission is also responsible, under the Act, for making a comprehensive study and investigating all of the pertinent conditions in the State affected by flood legislation and city, town and county enabling legislation. The Metropolitan and Area Planning Commissions described earlier in the urban areas section, provide various governmental units with the authority to control lakeshore and riverbank erosion. Refer to the urban areas for a more detailed discussion of any of the aforementioned acts.

3.3.9 Forestry

Forestry activities are viewed as not generating significant pollution loads on surface water qualities and not noticeably affecting groundwater quarries. They appear to have a relatively low level of priority for management and control procedures. This is partially due to the lack of information on forestry on which to base conclusions.[133]

The Forestry Division, DNR, is currently completing erosion studies to determine critical sediment loss from different forest practices. The focus of the Division work has historically been on production rather than conservation of water quality. Most of the timber production occurs in Southern Indiana.[134]

96

FOOTNOTES -- CHAPTER 3

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32. Indiana Heartland Coordinating Commission. 1977, Section 18.21.

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46. Indiana State Chamber of Commerce. 1975, Page 64.

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56. Reed, Robert W. The Management of Land Use Activities Which Affect Water Quality in the Great Lakes Basin. Great Lakes Basin Commission, Ann Arbor, Michigan, September, 1974, Page 11.

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59. Indiana Heartland Coordinating Commission. 1977, Section 17.21.

60. Ibid. Section 17.21

61. Ibid. Section 17.21.

62. Ibid. Section 17.21.

63. Ibid. Section 17.21.

64. Ibid. Section 17.21.

65. Ibid. Section 17.21.

66. Ibid. Section 17.21.

67. Ibid. Section 17.21.

68. Interviews with Bob Carter, SPCB and Al Klatte and Bob Morris, Environmental Health Division of the Marion County Health and Hospital Corporation, Indianapolis, August 15, 1977. Interviews with Joe Hayes, Chuck McKallion, Rex Jones, Indiana Heartland Coordinating Commission and Bob Jackson, DNR, August 16, 1977.

69. Memorandum from Bob Carter, SPCB. July 19, 1977.

70. Interview with Bob Carter, SPCB. August 8, 1977.

71. Reed, Robert W. 1974, Page 13.

72. Indiana Heartland Coordinating Commission. 1977, Section 18.28.

73. Interview with Joe Hayes, Chuck McKallion and Rex Jones, Indiana Heartland Coordinating Commission. August 16, 1977.

74. *Ibid*.

75. Interview with Al Klatte and Bob Morris, Environmental Health Division of Marion County Health and Hospital Corporation, Indianapolis, Indiana. August 15, 1977.

76. Memorandum from Bob Carter, SPCB. July 19, 1977.

77. Reed, Robert W. 1974, Page 24.

78. *Ibid*. Page 27.

79. Memorandum from Bob Carter, SPCB. July 19, 1977.

80. Office of the Indiana State Chemist and Seed Commissioner. *Plan for Certification of Pesticide Applicators*, Purdue University, Lafayette, Indiana. 1975, Introduction.

81. *Ibid*. Page 5.

82. Memorandum from Bob Carter, SPCB. July 19, 1977.

83. Interview with Bob Carter, SPCB. August 15, 1977.

84. Reed, Robert W. 1974, Page 28.

85. Interview with Bob Carter, SPCB, August 15, 1977. Interview with Joe Hayes, Chuck McKallion and Rex Jones, Indiana Heartland Coordinating Committee, August 16, 1977.

86. Interview with Bob Carter, SPCB. August 15, 1977.

87. *Ibid*.

100

88. Ibid.

89. Ibid.

90. Reed, Robert W. 1974, Page 40.

91. Memorandum from Bob Carter, SPCB. July 19, 1977.

92. Indiana Heartland Coordinating Commission. 1977, Section 18.27.

93. Ibid.

94. Ibid.

95. Ibid.

96. Interview with Bob Carter, SPCB. August 15, 1977.

97. Indiana Heartland Coordinating Commission. 1977, Section III, Page 32.

98. Reed, Robert W. 1974, Page 31.

99. Interview with Joe Hayes, Chuck McKallion, Rex Jones, Indiana Heartland Coordinating Commission. August 16, 1977.

100. Memorandum from Bob Carter, SPCB. July 19, 1977.

101. Reed, Robert W. 1974, Page 32.

102. Indiana Heartland Coordinating Commission. 1977, Section III, Page 35.

103. Interview with Joe Hayes, Chuck McKallion and Rex Jones, Indiana Heartland Coordinating Commission

104. Interview with Bob Carter, SPCB. August 15, 1977.

105. Reed, Robert W. 1974, Page 58.

106. Memorandum from Bob Carter, SPCB. July 19, 1977.

107. Interview with Bob Carter, SPCB. August 15, 1977.

108. Interviews with Joe Hayes, Chuck McKallion, And Rex Jones, Indiana Heartland Coordinating Commission. August 16, 1977.

109. Reed, Robert W. 1977, Page 55.

110. Memorandum from Bob Carter, SPCB. July 19, 1977.

111. Interview with Bob Carter, SPCB. August 15, 1977.

112. Interview with Joe Hayes, Chuck McKallion and Rex Jones, Indiana Heartland Coordinating Commission. August 16, 1977.

113. Memorandum from Bob Carter, SPCB. July 19, 1977.

114. Indiana Heartland Coordinating Commission. 1977, Section III, Page 17.

115. *Ibid*. Section III, Page 12.

116. Memorandum from Bob Carter, SPCB. July 19, 1977.

117. Indiana Heartland Coordinating Commission. 1977, Sections III, Page 14.

118. *Ibid*. Section 17.24.

119. *Ibid*. Section III, Page 17.

120. *Ibid*.

121. *Ibid*.

122. *Ibid*.

123. Reed, Robert. 1974, Page 114.

124. *Ibid*. Page 16.

125. Memorandum from Bob Carter, SPCB. July 19, 1977.

126. *Ibid*.

127. *Ibid*.

128. *Ibid*.

129. *Ibid*.

130. *Ibid*.

131. *Ibid*.

132. Reed, Robert. 1974, Page 46.

133. Ibid. Page 43.

134. Interview with Bob Jackson, DNR. August 16, 1977.

CHAPTER 4

FRAMEWORK ANALYSIS

4.1 GENERAL

This chapter presents the Contractor's analysis of the legislative framework for the State of Indiana. The analysis, based on the evaluations of land use activities presented in Chapter 3, identifies the strengths and weaknesses in the framework and the future actions which could correct them. The discussion covers each land use activity in terms of the problem, the current framework, the strength or weakness and the possible future actions.

4.2 ANALYSIS

4.2.1 Construction Site Runoff

Various agencies and boards have the authority to control site runoff. In Indiana, however, they focus their efforts on problems other than on strict water quality concerns. As a result, actions taken by these groups only indirectly impact pollution caused from site runoff. Direct control is limited to floodways within 75 feet of a legal drain and the general authority of cities and counties which is unused.

A sediment control law which will require the Soil and Water Conservation Districts to become regulatory agencies has been proposed. The passage of the sediment control law will provide the authority for control of construction site runoff. The Act has the built-in problems of an advisory organization becoming a regulatory agency and a traditionally rural organization addressing urban development problems. Enforcement will require additional staffing at the local level, which will require the identification of new funding sources. The State should consider providing financial assistance to the Soil and Water Conservation Districts to insure quicker implementation of the Act.

4.2.2 Stormwater Runoff[2]

The primary stormwater problem is combined sewers. There are no controls that cover the runoff of stormwater prior to its reaching the stormwater collection or combined sewer system. In addition, the issue of the best way

103

to handle stormwater requires additional research before technical remedies are identified. The areawide and non-designated 208 studies are applying their resources in the development of a technical solution.

Immediate action should be the continuation of the technical studies. These should include research into the impacts of different types of land uses and the development of design and engineering techniques which will reduce the amount of runoff. Upon the completion of these studies, recommendations should be implemented.

4.2.3 Application of Pesticides[3]

The State of Indiana has a comprehensive pesticide control program which, while not specifically focused on the prevention of the deterioration of water quality, provides adequate control of pesticides to insure indirect water quality prespective. The primary strength of the program is the training, certification and licensing of farmers using pesticides. This program has been well accepted by the farmers and could serve as a model program for the implementation of EPA requirements.

4.2.4 Feedlot Operations[4]

Feedlots have presented serious problems to water quality in Indiana. To correct this, the General Assembly passed a Confined Feeding Control Act which regulates feedlots based on minimum size (stricter than EPA requirements), and/or the severity of the pollution discharged. This Act gives the Stream Pollution Control Board adequate authority to control feedlot operations. In the Contractor's opinion, the Act and implementing regulations can be used as a model for use in other states.

Indiana lacks the necessary staff to implement the Act. In addition, only federal cost share funds are available to farmers to provide assistance for the construction of abatement facilities.

4.2.5 Erosion from General Farm Practices[5]

The problem of lack of sediment controls in the agricultural sector is the same as the sediment control problems discussed for construction site runoff (Section 4.2.1). The proposed sediment control act will require that plans be developed and implemented. The act will give regulatory authority to the Soil and Water Conservation Districts. Passage of the proposed act is the first necessary action. Implementation requires the provision of adequate resources to the Soil and Water Conservation Districts.

4.2.6 Private Sewage Disposal[6]

Private sewage disposal is a serious problem in Indiana. There is a need to develop a statewide regulatory program which would require counties to adopt and enforce septic tank design, installation, maintenance and repair ordinances. Currently, enforcement varies widely. Current programs suffer from a lack of manpower, which does not allow for a follow-up inspection program.

104

Indiana's major problem with regard to private sewage disposal is not one of manpower or regulation but that of permitting systems to be installed in soils not suited for them. In short, lack of proper land use controls or constraints. The regulations proposed by SHB detail how each site will be evaluated, and procedures to conduct percolation tests when necessary. It is the Contractor's understanding that the problem of private sewage disposal is being studied under the 208. It remains to be seen whether or not this study will develop a comprehensive approach.

4.2.7 Institutional Structure

The responsibility for the control of water pollution in the State of Indiana lies entirely with the Stream Pollution Control Board. Other environmental programs, including water resources, are the responsibility of other agencies. In addition, the SPCB has no staff of its own to carry out its responsibilities. It relies on the State Board of Health for its staff. Air pollution problems are handled in the same way, with the authority resting in the Air Pollution Control Board and the Board of Health providing staff.

FOOTNOTES -- CHAPTER 4

1. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.1.1.

2. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.1.2.

3. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.1.3.

4. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.1.5.

5. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.1.7.

6. See discussion of magnitude of the problem, current activities and evaluation presented in Section 3.3.3.3.

7. Environmental Protection Agency, Region V, Meeting Indiana's Environmental Protection Needs: Organizational and Staffing Requirements; U.S. EPA, Region V, November, 1972.

106

PART II

SUMMARIES OF LEGISLATION

CHAPTER 5

RELEVANT LEGISLATION

5.1 GENERAL

This Chapter presents a summary of the legislative authority for control of land use activities that may cause water pollution. Where information was available, the legislation is summarized by Act, with the implementing agency, affected land use activity, purpose, provisions and administrative responsibilities identified. Where the Contractor is unable to secure information allowing summarization, the acts are listed.

The summaries are presented in numerical order based on statute number. A listing of the acts follows:

IC 13-1-57	Confined Feeding Control Law
IC 13-3-1	Soil and Water Conservation District Act
IC 13-4-7	Selected Oil and Gas Laws and Regulations
IC 13-7	Environmental Management Act
IC 16-1-5	Private Sewage Disposal--County Health Boards
IC 18-7-2	Metropolitan Plan Commission for Counties with 1st Class Cities
IC 18-7-4	Area Plan Commission
IC 19-2-1	Refuse Disposal Act (SPC-18)--Solid Waste Management Permit Regulations
IC 19-3-1	Regional Water/Sewage and Solid Waste Disposal Act
IC 19-3-2	Conservancy District Act
IC 19-4-1	Drainage Code

Counties Enabling Legislation
Flood Control Act (P.L. 122)
Flood Control Management Act (P.L. 123), Rule No. FPM-1
Natural Resources Act of 1965
Pesticide Use and Application Law - Draft Regulations
Draft Soil Erosion and Sedimentation Control Act
Towns and Cities Enabling Legislation

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 13-1-57 - Confined Feeding Control Law - Waste Handling and Disposal Guidelines for Indiana Dairymen, Poultrymen, Swine Producers, Beef Producers

Implementing Agency: Indiana Stream Pollution Control Board

Affected Land Use Activities: Feedlot Operations

Purpose:

To regulate the collection and disposal of significant volumes of animal wastes.

Provisions:

1. Authorizes the Indiana Stream Pollution Control Board (SPCB) to require approval of plans for treatment and control facilities for the operation of confined feeding operations. Regulation of confined feeding operations by the SPCB is authorized statewide under the statute.

2. Defines confined feeding operations as to include:

   (1) any confined feeling of three hundred (300) or more cattle, six hundred (600) or more swine or sheep and thirty thousand (30,000) or more fowl; or

   (2) any animal feeding operation electing to come under the Law; or

   (3) any animal feeding operation that is causing a violation of the Stream Pollution Control Law or any regulations of the Board.

3. Provides that confined feeding operations existing at the time of the effective date of the law (April 2, 1971) and those which were in the state of construction at that time, submit an application and pertinent information to the Board on or before July 1, 1973. On or after the effective date, prior approval of the Board must be obtained for the construction of a confined feeding operation.

4. Requires applicants to submit an application to the Board, plans for waste treatment and control facilities, and other information regarding the location of the operation, the proximity to the nearest stream and water supply, the type and number of livestock to be handled, the facility for holding wastes, and the runoff control facilities to be constructed. Other materials to accompany the application include soil boring data, a topographic map, a plot plan, and detailed plans and cross sections for the waste treatment facilities. Applicants often obtain assistance from their local District Conservationist in preparing plans for animal waste treatment facilities. Approval to construct

109

or operate the confined feeding operation is granted if the water pollution control proposal is satisfactory.

5. Provides the Board with the authority to disallow continued operation of confined feeding operations which cause violation of stream standards or other regulations through a specified procedure. The Board may seek injunctive relief as it deems necessary under the circumstances. In addition, violators of any provision of the Act or the regulations adopted by the Board under the Act, may be prosecuted for a misdemeanor. Fines may be imposed upon those found guilty.

6. Empowers the Board to make all necessary rules and regulations.

Waste Handling and Disposal Guidelines for Indiana Dairymen

7. Advises dairymen of design and management for dairy housing systems to minimize waste problems.

8. Advises dairymen as to the types of dairy waste handling and storage facilities.

9. Provides dairymen with guidelines for disposal of diary waste products.

Waste Handling and Disposal Guidelines for Indiana Poultrymen

10. Advises poultrymen of manure production rates and recommended intensities.

11. Advises poultrymen of types of poultry waste handling systems.

12. Provides poultrymen with guidelines for returning poultry wastes to the land.

Waste Handling and Disposal Guidelines for Indiana Beef Producers

13. Advises beef producers with respect to design and management of beef cattle housing systems to minimize waste problems.

14. Advises beef producers of types of beef waste handling and storage facilities and requirements.

15. Provides beef producers with guidelines for disposal of beef cattle waste products.

Waste Handling and Disposal Guidelines for Indiana Swine Producers

16. Advises swine producers as to design and management of swine housing systems to minimize waste problems.

17. Advises swine producers as to types of swine waste handling and storage facilities.

110

18. Provides swine producers with guidelines for disposal of swine waste products.

Administrative Responsibilities:

The Bureau of Engineering, State Board of Health, is responsible for providing technical and administrative services for the SPCB.

The Bureau contains the Division of Water Pollution Control, which has authorized the Construction Plan Review Section of the Division's Facilities Construction Branch with the responsibilities of plan review under the Act.

The Enforcement Branch of the Division of Water Pollution Control is responsible for complaints and follow-up inspection with regard to confined feeding operations.

111

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 13-3-1 Soil and Water Conservation District Act

Implementing Agency: Soil and Water Conservation District

Affected Land Use Activities: Erosion, Drainage

Purpose:

To establish Soil and Water Conservation Districts to remedy soil and water conservation problems.

Provisions:

1. Provides SWCD's with the authority to carry out conservation measures within their areas, to construct and maintain structures necessary for their authorized purposes, to develop comprehensive plans for resource conservation, and to assist land occupiers within their district to achieve resource conservation objectives.
2. Requires that SWCD's obtain the consent of the landowner or occupier of the land to conduct control measures. Control measures for which the SWCD is authorized include engineering operations, improved cropping practices, seeding and planting of eroded lands, afforestation, soil stabilization, runoff retardation, and other conservation practices.
3. Restricts SWCD's from exercising eminent domain, incurring debts, or levying taxes or special assessments.

Administrative Responsibilities:

The SWCD's are primarily responsible for carrying out soil and water conservation programs. In administering the programs, the SWCD's are responsible for analyzing district needs and developing long-range programs aimed at solving soil and water conservation problems. Although these problems are solved largely by landowners themselves, technical and educational assistance is furnished by various organizations and government agencies. The Soil Conservation Service (SCS) of the U.S. Department of Agriculture through a memorandum of understanding with each District, supplies technical assistance.

SWCD's are the co-sponsors of small watershed projects under the Watershed Protection and Flood Prevention Act, as amended, in conjunction with Conservancy Districts. The Conservancy District becomes the contracting organization which carries out the structural measures of the project. SWCD's cooperate with landowners and operators in applying soil conservation measures required under the Act to protect the structural improvements of the project.

POLITICAL JURISDICTION: Indiana

Title or Reference: Selected Oil and Gas Laws, IC 13-4-7, coupling chapters 277, 137, 384. P.L. 180, and Regulations Affecting IC 13-4-7

Implementing Agency: Natural Resources Commission, Department of Natural Resources, Division of Oil and Gas

Affected Land Use Activities: Brines from oil and gas

Purpose:

Provisions:

1. Authorizes the NRC to make all necessary rules and regulations with regard to:
   a. Making of reports showing the location of oil and gas wells;
   b. Identification of ownership of oil or gas wells by showing operator, farm and well number, directional surveys in case of directional hole and reports on well locations;
   c. Preventing drowning by water of any stratum capable of producing oil or gas or part thereof, except for secondary recovery purposes by methods approved by the Commission;
   d. Regulating the spacing of all wells for the production of oil and gas and input, injection or disposal purposes and the issuance of permits for the drilling of wells. Twin wells may be drilled on the same tract to different sandstone or limestone formations allocating the acreage in the tract for each producing formation as provided in this Act. With the drilling of any oil or gas well or the development of a pool in the corporate limits in any city, village or unincorporated town, a certified copy of the official consent by ordinance or resolution of the municipal authorities must accompany the application for permit.
2. Provides the NRC with the power to regulate the disposal of salt or sulphur-bearing water and waste liquids produced in the operation of any oil or gas well and to prevent fire hazards at well locations and to adopt proper regulations.
3. Requires any person drilling or having charge of the drilling of such test hold to safely plug the hole to prevent the escape or migration of gas, oil or water.

113

4. Requires any person drilling a well for oil and gas purposes to furnish:

   a. A copy of the driller's log of the well;

   b. A copy of any electric log taken in the drilling of said well;

   c. A copy of the drilling time record;

   d. Typical drill cuttings or cores.

5. Provides the Commission with the authority to enter upon and inspect oil or gas properties or locations where wells are being drilled or have been drilled for the purpose of ascertaining whether the provisions of this Act and the valid regulations of the Commission are being or have been complied with, including information as to the drilling or completion depth of any well.

6. Requires that no person, owner, operator, landowner, leaseholder, contractor, driller, foreman and/or employee shall perform any actual drilling or deepening operation of an oil well, or any well connected or associated with oil or gas field operation such as gas well, water input well, gas input well, gas storage well, disposal well, non-potable water supply well or well drilled for the purpose of gaining geological or structural information until the Commission or its duly authorized agent has issued a permit authorizing the drilling or deepening of such well.

7. Stipulates that in the event any well drilled for oil and gas shall be completed as a dry or nonproductive well, the operator and/or landowner is required to plug and permanently abandon the well in such manner as to confine permanently all oil, gas and water in the separate strata.

8. Provides NRC with the power and authority to adopt reasonable rules and regulations concerning the protection of coal seams underlying lands on which wells for oil or gas purposes are proposed to be drilled, to the effect that the operator shall, in the event the well is completed as a producing well, run a mine string of casing from the surface through such stratum of coal to a point at least fifty (50) feet below the base of the coal seam or mine floor, whether drilled through a pillar or not.

9. Subjects any person who knowingly and willfully violates any provision of this Act, or any valid rule, regulation or order of the Commission made hereunder, to be guilty of a misdemeanor and shall upon conviction be fined not less than one hundred dollars ($100.00) nor more than five hundred dollars ($500.00) for each day upon which such violation shall

114

occur or continue to which may be added imprisonment in the county jail not to exceed sixty (60) days and each act of violation shall constitute a separate offense.

Rules and Regulations Affecting Oil and Gas Operations -- (IC 13-4-7)

10. Stipulates that all owners, managers, contractors, drillers, service companies, pipe pulling and salvage contractors or other persons drilling, casing or plugging oil, gas or gas storage wells shall at all times conduct their operations and drill, case, plug and abandon the same in the manner set forth by the Acts or regulations, so as to prevent waste or the escape of oil or gas out of one stratum to another, prevent the intrusion of water into oil, gas or coal strata, prevent the pollution of fresh water supplies by oil, gas, salt water or sulphur bearing water, and prevent physical damage to an underground gas storage reservoir.

11. Charges DNR with the duty of enforcing the provisions of the Act and all valid rules, regulations and orders adopted and promulgated pursuant thereto, may enforce or cause same to be enforced by action initiated by the Oil and Gas Division of the Department of Natural Resources.

12. Provides that Natural Resources Commission may require every person previous to the commencing of drilling or deepening any well for oil or gas purposes, including water or gas input wells, salt water disposal wells, geologic or stratigraphic test wells, gas storage or gas storage observation wells and non-potable water supply wells and every person who has created or acquired any well drilled for these purposes which has not been plugged and abandoned in accordance with the laws, rules, and regulations or orders of the Natural Resources Commission to execute and file with the Commission a bond of one thousand dollars ($1,000.00) for each of such wells. In lieu of a one thousand dollar ($1,000.00) bond, a blanket bond in the sume of five thousand dollars ($5,000.00) may be used for all wells.

13. Describes the kinds of bonds that may be used.

14. Details the application procedures and regulations.

15. Describes the surface casing requirements.

16. Stipulates that all wells drilled for the commercial production of natural gas from a reservoir of any age if deeper than one thousand (1,000) feet shall have a drilling unit which shall consist of not less than one hundred and sixty (160) acres of surface area lying within a quarter section of land as established by the Official Public Land Survey by the Rectangular Surveying System for the State of Indiana.

115

All such wells shall not be located less than six hundred sixty (660) feet from any lease line, property line, or subdivision which separates unconsolidated property interests or less than one thousand three hundred twenty (1,320) feet from any drilling well or wells capable of production of gas from the same reservoir of any age if deeper than one thousand (1,000) feet.

17. Establishes drilling units for sandstone reservoirs whereby every quarter, quarter section containing ten (10) acres, more or less, as established by the Official U.S. Public Lands Survey by the Rectangular Surveying System for the State of Indiana.

18. States that salt water and other waste liquids from oil and gas well drilling or operations may be collected in pits for a period of one year at locations where the waste will not contaminate groundwater or pollute surface water. In cases where salt water and other waste liquids production is of such small quantity that no contamination of groundwater or pollution of surface water will occur, the Commission may authorize the continued use of such pit beyond the limit of one year, provided the operator requests such continuance and is not in violation of the water quality code.

    Earthen pits may be used for such purposes only when the pit is underlain by tight soil such as clay or hardpan. Where the soil under the pit is porous and closely underlain by a gravel or sand stratum, impounding of salt water or the waste liquids in such earthen pits is prohibited except where pit is constructed with such material which will prevent seepage from the pit. Before any earthen pit may be constructed for such purpose the operator shall file with the Commission an application on the form approved by the Commission. The form shall contain certain geological and engineering data which is deemed necessary to enable the Oil and Gas Division to determine whether or not the pit will be sufficient to prevent the contamination of groundwater or pollution of surface water.

Administrative Responsibilities:

The Natural Resources Commission is responsible for promulgating all necessary rules and regulations with regard to the location of wells, ownership, spacing, disposal of salt or sulphur-bearing water and waste liquid produced in the operation of the well. The Department of Natural Resources, Division of Oil and Gas is delegated the duty of enforcing provisions of the Act and all valid rules, regulations, and orders. The Division is also responsible for issuing the drilling or deepening permits.

POLITICAL JURISDICTION: Indiana

Title or Reference: 1C 13-7, Environmental Management Act as amended in 1973

Implementing Agency: Environmental Management Board

Affected Land Use Activities: General Enabling Legislation

Purpose:

To create the Environmental Management Board of the State of Indiana, providing for its membership, continuation of the Indiana Stream Pollution Control Board and Indiana Air Pollution Control Board, delineation of prohibited acts, establishment of criminal and civil penalties for violations thereof, granting board authority to establish rules, regulations and standards, power of board to issue discharge and facilities permits.

Provisions:

1. Creates the Environmental Management Board, and continues the Stream Pollution Control Board and the Air Pollution Control Board as now establishes without affecting their powers, duties and programs.

2. Provides criminal and civil penalties; and provides for declaration of emergencies.

3. Provides that the Environmental Management Board and its agencies, defined as the Stream Pollution Control Board and the Air Pollution Control Board, shall have power to act for the State in the adoption of standards pursuant to any federal law regarding environmental protection and shall have the authority to establish and apply standards, procedures, permit conditions and other requirements of the Federal Water Pollution Control Act of 1972 and regulations adopted pursuant thereto. The Indiana Stream Pollution Control Board has the authority to develop and adopt 303(e) basin and related plans as required by federal regulations. The Governor of the State of Indiana will submit the continuing planning process and WQM plans to the U.S. EPA, Region V Administrator for approval.

4. Stipulates that the EMB officially approve SPCB and APCB and regulations before they become effective.

5. Provides the EMB with broad powers in the areas of planning and regulation. The authority and exercise of these powers is delegated to the APCB in the area of air pollution and the SPCB for water pollution.

117

Administrative Responsibilities:

The Environmental Management Board is responsible for coordinating the environmental programs and policies carried out by the various State agencies and departments.

POLITICAL JURISDICTION: Indiana

Title or Reference: Environmental Management Act

Implementing Agency: Stream Pollution Control Board

Affected Land Use Activities: General enabling legislation

Purpose:

To create the Stream Pollution Control Board of the State of Indiana, providing for its membership, granting it control over the pollution of any waters of the State with the powers to make determinations, orders and regulations governing the same and prescribing the powers and duties of such board; to prohibit the pollution of any waters of the State; to provide for the raising of funds by municipal corporations; to comply with the orders of the Board; and providing penalties for the violation thereof.

Provisions:

1. Establishes the Stream Pollution Control Board.

2. Stipulates that the Stream Pollution Control Board shall have jurisdiction to control and prevent pollution in the waters of this State with any substance which is deleterious to the public health or to the prosecution of any industry or lawful occupation, or whereby any fish life or any beneficial animal or vegetable life may be destroyed, or the growth or propagation thereof prevented or injuriously affected.

3. Provides the Board with the power to require the sealing of mines, oil gas wells, brine wells or any other subterranean strata causing, contributing or about to cause or contribute to a polluted condition of the waters of this State.

4. Provides the Board or any agent duly appointed with the power to enter at all reasonable times in or upon any private or public property, for the purpose of inspecting and investigating conditions relating to the pollution of any water of this State. The Stream Pollution Control Board shall have the power to call upon any State officer, board, department, school, university or other State institution, and the officers or employees thereof, and receive any assistance deemed necessary to the carrying out of the provisions of this Act.

119

5. Provides the Stream Pollution Control Board with the power to determine what qualities and properties of water shall indicate a polluted condition of such water, in any of the streams or waters of this State, that shall be deleterious to the public health or to the prosecution of any industry or lawful occupation for which or in which any such waters may be lawfully used or employed, or whereby the carrying on of any agricultural, floricultural or horticultural pursuit may be or shall be injuriously affected, or whereby the lawful conduct of any livestock industry, or the use of any such waters for domestic animals may be prevented, injuriously affected or impaired. The Stream Pollution Control Board shall have the power to make regulations and orders restricting the polluting content of any waste material and polluting substances discharged or sought to be discharged into any of the streams or waters of this State. The Stream Pollution Control Board shall have the power to take appropriate steps to prevent any pollution which shall be deemed by the Stream Pollution Control Board to be unreasonable and against public interests, in view of the existing condition in any stream or other waters of this State.

6. Prohibits any corporation, municipal corporation, association, partnership, person or any other legal entity to throw, run, drain, or otherwise dispose into any of the streams or waters of this State, or to cause, permit or suffer to be thrown, run, drained, allowed to seep or otherwise disposed into such waters, any organic or inorganic matter that shall cause or contribute to a polluted condition of such waters, according to any determination of the Stream Pollution Control Board.

7. Requires that all plans and specifications for abatement or correction of any polluted condition shall be approved by the Stream Pollution Control Board. The Stream Pollution Control Board shall advise and consult, on request, with any person planning any correction, or prevention of any pollution condition of any water of this State.

Administrative Responsibilities:

The Stream Pollution Control Board is responsible for administering the following programs:

a. NPDES Permit System;

b. Unauthorized Discharge Control Program;

c. Liquid Industrial Waste Hauling and Discharge Permit Program;

d. Solid Waste Management Permit System;

e. Confined Feeding Control Law;

f. Certification of Water and Wastewater Treatment Plan Operators; Classification of Water Systems and Wastewater Treatment Facilities;

g. Municipal Sewage Works Construction Grant Program;

h. Continuous Planning -- including Sections 208 and 303(e) of the 1972 Federal Water Pollution Control Act.

The Board also establishes an intergovernmental process which provides for water quality management decisions to be made on an areawide or local basis and for the incorporation of such decisions into a comprehensive statewide program; develops a broad-based public participation program viewed at informing and involving the public in the water quality management program; prepares and implements water quality management plans which identify water quality goals and the established State water quality standards; defines specific programs, priorities, and targets for preventing and controlling water pollution, and establishes policies which guide decision-making; develops a strategy which sets forth the State objectives, approach, and priorities for preventing and controlling pollution over a five-year period; translates the State strategy into the annual State program plan, which establishes program objectives, identifies the resources committed for the State program each year, and provides a mechanism for reporting progress toward achievement of program objectives.

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 16-1-5, 17-2, 22, 16-12-21

Implementing Agency: Local County Health Boards

Affected Land Use Activities: Private sewage disposal

Purpose:

To regulate private sewage disposal systems or septic tank systems.

Provision:

> Authorizes County Boards of Commissioners to adopt ordinances for the general purpose of protecting the public health and to adopt procedures for the control of private sewage disposal systems.

Administrative Responsibilities:

Local county health boards with the exception of Marion County/Indianapolis are responsible for regulating private sewage disposal systems or septic tank systems.

The County Boards of Commissioners may adopt ordinances and regulations with regard to private sewage disposal systems. The enforcement of the regulations is usually left up to the county sanitarian, but there are some instances where the Plan Commissioner has the responsibility for approving new system initiation.

122

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 18-7-2

Implementing Agency: Metropolitan Planning Commissions for Counties Containing 1st Class Cities

Affected Land Use Activities: All Categories

Purpose:

To regulate the land uses and types of structures built, as well as site amenities.

Provisions

1. Creates metropolitan planning departments (Indianapolis only) in counties having cities of the first class.

2. Authorizes the metropolitan planning commissions to adopt zoning ordinances, plat committees, and to issue improvement location permits.

   The commission creates and recommends to the county council a zoning ordinance or ordinances that, among other things, assures that the public health, safety, comfort, morals, convenience, and general public welfare may be promoted. In addition, the ordinances can regulate the use and intensity of use of land and lot areas and can classify, regulate, and limit the height, area, bulk, and floor space of structures in the area surrounding structures.

   The ordinances can also provide for performance standards. However, there is no specific reference in the law that suggests specific regulations on the actual construction practices on zoned land.

3. Requires the metropolitan planning commissions to recommend to the county council for adoption a subdivision control ordinance. The ordinance specifies the standards by which the commission shall determine whether a plat qualifies for approval and must contain among other things standards on minimum width, depth, and area of lots within the subdivision, standards for the classification of use, height, area, bulk, and floor space of structures in the subdivision and the standards for the extension of facilities and municipal services.

4. Provides that any provisions of the zoning ordinances may be appealed to a metropolitan board of zoning appeals.

5. Authorizes the county council to adopt as part of a zoning or subdivision ordinance, or as a separate ordinance, provisions requiring building contractors proposing to build to furnish an annual bond in the amount of $1,000 to insure that if the construction does not comply with the

123

zoning or subdivision control statute, it can be made conforming without cost to the county or to the person for whom construction was undertaken.

6. Provides the county council with the authority to require the procurement of an improvement location permit for the erection, alteration, or repair of any structure. If such a provision is adopted, a structure cannot be located and a permit cannot be issued unless the use, character, and location of the structure is in conformity with the provisions of the applicable ordinances.

7. Designates a plat committee.

8. Requires any person desiring the approval of a plat for a subdivision to submit a written application to the executive director for approval along with a copy of the proposed plat. If the executive director determines that the standards and ordinances have been met, then he sets up a date for a hearing for the plat committee. If the plat committee determines that the application and plat comply with the standards of the ordinance, it will approve along with any conditions that it may impose on the approval. If the plat committee disapproves the petition or the application, the applicant may appeal to the full commission, and the full commission in its action has the same powers as the committee.

9. Authorizes the plat committee or the commission before approving the plat to require the applicant to furnish a maintenance bond to the county in an amount satisfactory to the plat committee or commission to insure proper workmanship and use of proper materials in making of the improvements and installation in the platted area.

Administrative Responsibilities:

The metropolitan planning commission is responsible for adopting a plan and recommending to the county council zoning and subdivision ordinances. The commission is also responsible for issuing improvement permits.

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 19-2-1 -- Refuse Disposal Act, SPC 18, Solid Waste Management Permit Regulations

Implementing Agency: Stream Pollution Control Board

Affected Land Use Activities: Solid Waste

Purpose:

To authorize counties, cities and towns to establish, acquire, construct, install, operate and maintain certain facilities for the collection and disposal of refuse and to declare open dumps to be inimical to human health.

Provisions:

1. Authorizes and empowers every county, city, and town to establish, acquire, construct, install, operate and maintain facilities for the collection and disposal of refuse, to secure the collection and disposal of refuse accumulated within or without the corporate limits of such county, city or town, and to issue revenue bonds to pay in whole or in part the costs of such facilities. Approval shall be obtained from the State board for any method or methods used for the disposal of refuse prior to obtaining land or facilities.

2. Every county, city or town is authorized and empowered to contract with persons for the collection and disposal of refuse and to provide that persons contracted with shall have the exclusive right to collect or dispose of any or all refuse.

3. Provides the county council, common council of the city or town board with the authority to make appropriations for the acquisition, establishment, operation and maintenance of the refuse collection and disposal premises and facilities or services.

   Such appropriation or appropriations may include the employment of a person or persons and provision of such vehicles and equipment which may be necessary or incidental to the collection or disposal of refuse.

4. States that the construction, acquisition, improvement, equipment, custody, administration, operation and maintenance of any such facilities for the collection and disposal of refuse and the collection of revenues and the service rendered shall be under the supervision and control of the board of county commissioners, the board of public works of the city, or of the committee or body authorized to perform the duties of a board of public works in cities or towns where there is no such board, or the county council, common council or town board may, in its discretion, provide by ordinance that the same shall be under the supervision and control of the sanitary board of such city or town.

125

5. Authorizes any city, town or county constructing, acquiring or maintaining collection and refuse disposal facilities and any other city, town or county desiring use of such facilities with the power to contract for the payment of the cost and expenses of such facilities.

6. Provides that the acquisition, establishment, construction, installation, operation and maintenance of facilities and land for the collection and disposal of refuse may be financed through general taxation, through service rates or through a combination of these methods.

7. Stipulates that nothing in this act contained shall be so construed as to authorize or permit any county, city or town to make any contract or to incur any obligation of any kind or nature except such as shall be payable solely from the funds provided under this act or through general taxation or through a combination of these methods.

8. Declares open dumps to be inimical to human health, and as such, not suitable means of refuse disposal. Except as hereinafter provided, on or after January 1, 1971, disposal of garbage, rubbish, and refuse on lands shall be made only through use of sanitary landfills or by means of incineration, composting, garbage grinding, or other acceptable methods approved by the Stream Pollution Control Board.

Indiana Stream Control Board Regulation SPC-18 - Solid Waste Management Permit

9. Provides standards for approval of refuse processing and disposal facilities as required by the Refuse Disposal Act, as amended, provides for the issuance of construction plan permits, specifies minimum operating standards for such facilities, and provides for the issuance of operating permits.

10. Prohibits any person from constructing sanitary landfill facilities without a valid construction plan permit issued by the Stream Pollution Control Board or its designated agent.

11. Requires that complete applications for construction plan permits for constructing sanitary landfill facilities must be made on forms provided by the Board and must be submitted together with the required plans, specifications, and description of project 60 days in advance of the proposed date of start of construction unless a shorter time is approved in advance by the Board.

12. States that complete applications for construction plan permits to construct refuse processing facilities must be made on forms provided by the Board and must be submitted together with the required plans, specifications, and/or description of project 60 days in advance of the date of start of construction unless a shorter time is approved in advance by the Board.

13. Requires that applications for permits under this Chapter be accompanied by evidence that proper zoning has been obtained for the proposed site.

14. Stipulates that no person shall cause or allow the operation of a sanitary landfill or refuse processing facility without a valid operating permit issued by the Board.

15. States that no application for an operating permit for a new sanitary landfill or refuse processing facility will be accepted unless it holds a valid construction plan permit, except that an application for an operating permit may be submitted at the same time as an application for a construction plan permit.

16. Requires that complete applications for operating permits for sanitary landfills or refuse processing facilities be made on forms provided by the Board at least 60 days prior to the proposed initial date of operation unless a shorter time is approved in advance by the Board.

17. States that sanitary landfill operations must conform to the following minimum general standards of operation:

    (a) All on-site roads shall be passable by vehicles, including automobiles, regardless of weather.

    (b) Any shelter or sanitary facilities provided shall be constructed in accordance with the requirements of the Indiana State Board of Health for such construction.

    (c) Feeding of cattle, hogs, poultry or other animals at the landfill site is prohibited.

    (d) No refuse deposit shall be made nearer than 600 feet to any dwelling without written consent of the occupant and owner of the dwelling.

18. States that sanitary landfill operations must conform to the following minimum water quality standards:

    (a) Where groundwater monitoring wells are deemed necessary by the Board, the sampling frequency will be specified. Tests performed on groundwater samples shall include COD, pH, Fe., Cl, conductivity and other tests deemed necessary by the Board.

    (b) Surface water courses and runoff shall be diverted from the sanitary landfill by trenches and proper grading. The sanitary landfill shall be constructed and cover material graded and seeded so as to promote rapid surface water runoff without excessing erosion. Regrading shall be done as required during operation and after completion to avoid ponding and maintain cover thickness.

    (c) In no case shall solid waste be deposited within an aquifer. A barrier of undisturbed soil shall be maintained between the lowest

127

portion of deposited refuse and the aquifer of a thickness to be determined by the Board based upon permeability and ion exchange properties.

19. Prohibits open burning of solid wastes.

Administrative Responsibilities:

The Stream Pollution Control Board is responsible for promulgating all necessary rules and regulations and for enforcing all provisions of the Act. Towns, cities, and counties are charged with acquiring, constructing, and maintaining facilities for the collection and disposal of refuse.

POLITICAL JURISDICTION: Indiana

Title or Reference: 1C 19-3-1.1, Regional Water/Sewage and Solid Waste Disposal Act

Implementing Agency: Regional Waste/Sewer/Solid Water Districts

Affected Land Use Activities: Solid Waste

Purpose:

To provide for the establishment of regional water/sewage/solid waste districts in those areas where no public facilities are available or are insufficient. To provide statutory authority for creation of a regional district that may encompass more than one political subdivision.

Provisions:

1. Authorizes the creation in any area of the state of a regional water, sewage and solid waste district.

2. Details the process of establishment.

    a. Petition filed with Stream Pollution Control Board;

    b. Hearing;

    c. Finding of facts and recommendations to the Board;

    d. Board order directing that the district be organized (Preliminary);

    e. Board of trustees selected;

    f. District plan filed with Stream Pollution Control Board within 6 months from date of preliminary order;

    g. Board approval, authorization for district to proceed.

3. Provides the Regional Water, Sewage and Solid Waste District with statutory powers and duties to:

    a. Sue or be sued;

    b. Make or enter into contracts;

    c. Adopt by-laws and regulations;

    d. Construct, acquire, lease, operate or manage sanitary sewage works or plants;

129

e. Fix, alter, charge and collect reasonable rates and other charges in the area serviced by its facility;

f. Require any property producing sewage to connect to its sewer system provided there is an available sanitary sewer within 300 feet of the property line;

g. Exercise jurisdiction, control, possession and supervision over all property, plants and other interests conveyed, delivered, transferred or assigned to such district;

h. Merge or combine with any other district (2/3 board majority);

i. Assume liability for failure to perform any agreement;

j. Purchase, condemn and sell real property;

k. Provide for joint construction by agreement with any other political subdivision;

l. Remove or add structures;

m. Make provision for, contract for or sell any of its by-products or waste;

n. Exercise power of eminent domain;

o. Exercise powers of district without consent of other political subdivisions;

p. Issues revenue bonds to pay for the cost of works as well as enlargement or improvement; however, RSDs are limited to revenue bonding if long-term indebtedness is necessary;

q. Obtain a loan from any agency of the federal government or agency of the State of Indiana.

4. Establishes the Board of Trustees with the power to run the Districts. The Board is empowered to make all necessary rules, regulations and enforce those rules.

5. Authorizes the Board with the power to make contracts to purchase supplies, materials or labor for any work.

130

Administrative Responsibilities:

Regional Water, Sewage and Solid Waste Districts are responsible for providing one or more of the following activities: water supply for domestic, industrial and public use; collection, treatment and disposal of sewage within and without the district; or the collection, treatment and disposal of solid waste and refuse within and outside the district. The districts are run by a Board of Trustees.

POLITICAL JURISDICTION: Indiana

Title or Reference: IC 19-3-2 Conservancy District Act

Implementing Agency: Conservancy Districts

Affected Land Use Activities: Agriculture: Erosion, Drainage, Solid Waste, Liquid Waste, Recreation

Purpose:

To provide for flood prevention and control, improve drainage, provide for irrigation, provide for water supplies, including treatment and distribution for domestic, industrial and public use, to provide for the collection, treatment and disposal of sewage and other liquid wastes, develop forests, wildlife areas and parks and recreational facilities where feasible in connection with beneficial water management, preventing the loss of topsoil from injurious water erosion.

Provisions:

1. Provides that any area may be established as a district, but no part of a district may be completely separate from any other part. Cities may be included in whole or in part within the district. Conservancy districts may be established for any one or more of the following purposes:

   a. Flood Control

   b. Drainage

   c. Irrigation

   d. Water Supply

   e. Sewage

   f. Recreation

   g. Soil Erosion

2. Outlines the process of establishing:

   - Petition filed with Clerk of Circuit Court

   - Court hearing

   - Court order referring petition to Natural Resources Commission

   - Commission hearings as necessary

132

- Fact-finding report from commission to court within 120 days of the referral of the petition to them

- Court hearing

- Court order establishing district

- Board of directors appointed

- District plan filed with commission within 120 days from date of appointment of Board

- Commission approval

- District plan filed with court

- Court hearing

- Court approval.

3. Requires the Conservancy District to develop a district plan. The district plan should consist of an engineering report that sets forth the general, comprehensive plan for the accomplishment of the purpose or purposes for which the district was established. It should describe the physical nature of the district, the problems confronting the district, the works of improvement needed, the location of such works of improvement, and the benefits to be derived from such improvements. It should include maps, preliminary drawings, and estimates of costs based upon preliminary engineering surveys and studies. It should also include copies of any agreements or other arrangements with other persons or with any governmental agencies with respect to the financing, construction, maintenance, and operation of any of the works of improvement proposed in the district plan.

4. Provides the Conservancy District with the power to:

    a. Exercise general supervision and make rules and regulations

    b. Prescribe uniform rules pertaining to investigations and hearings

    c. Sue and be sued

    d. Establish an advisory committee or committees

    e. Protect and guard against encroachment by any stream

    f. Establish just and equitable rates and charges for sewage disposal

    g. Collect and enforce such rates

h. Require any sewage-producing property to connect to its sewer system

i. Provide for and collect a connection charge to its system

j. Contract for treatment

k. Levy taxes on real property within district

l. Make assessments on real property within district for exceptional benefits

m. Issue bonds and short and long-term notes

n. Incur debts and liabilities

o. Exercise power of eminent domain both inside and outside boundaries of district

p. Institute civil legal proceedings

q. Purchase or rent property

r. Sell services or property

s. Make contracts or agreements

t. Receive and disburse funds

u. Lease land

v. Do construction and maintenance outside district and even outside the State of Indiana

Administrative Responsibilities:

Conservancy Districts are responsible for providing new drainage facilities for disposal of liquid wastes and sewage, adequate water supply, protection of topsoil, and creation of natural recreation facilities.

POLITICAL JURISDICTION: Indiana

Title or Reference: Drainage Code, 19-4-1

Implementing Agency: County Drainage Board, County Supervisors

Affected Land Use Activities: Drainage

Purpose:

To regulate any construction that takes place within 75 feet of any legal drain within the county.

Provisions:

1. Creates in each county a County Drainage Board and details the membership on the Board.
2. Stipulates that the County Surveyor shall classify all legal drains in the county as:
    a. Drains in need of reconstruction;
    b. Drains in need of periodic maintenance;
    c. Drains that should be vacated.
3. States that establishment of a new legal drain shall be accomplished by a petition signed by landowners on whose land the drain will be situated.
4. Provides County Drainage Boards and County Surveyors with the right of entry over or upon lands lying within 75 feet of any legal drain. The 75 feet is measured at right angles to the center line of any legal title ditch and is measured at right angles from the existing top edge of each bank of a legal open ditch as determined by the surveyor.
5. States that the owners of lands over which the right-of-way runs may use such land in any manner not inconsistent with the proper operation of the drain and the provisions of the Act.
6. States that permanent structures may not be placed upon or over such right-of-way unless the written consent of the board is first obtained. Temporary structures may be placed upon or over such right-of-way without the written consent of the board. These must be removed immediately by the landowner when so ordered by the board or by the surveyor.

135

7. Requires the surveyor to mail a notice to the owner to remove the obstruction and repair the drain, if a legal drain is obstructed or damaged by an unauthorized structure caused by an owner of the land affected by the drain, and if the owner fails to remove the structure within 10 days after the receipt of such notice, the surveyor will perform the work and the cost will be paid for out of the annual maintenance fund of such a drain if one has been established. If the obstruction or damage has been caused by acts or omission of the owner of the land affected by the drain, the board after a hearing may add an amount sufficient to pay for the damage to the next annual assessment made against the lands of the owner. If the obstruction or damage is caused by the acts or omission of a person other than the owner of the lands affected by the drain, then the board can institute a suit against that person in any court of competent jurisdiction and is entitled to recover the reasonable value of removing the obstruction and repairing the damage plus a reasonable attorney fee for the board's attorney.

Administrative Responsibilities:

County Drainage Boards have the primary responsibility for maintaining the legal drains within each county, keeping the drains clear to allow for proper movement of water, repairing damaged drains, removing dangerous obstructions in the drains.

Both the County Drainage Boards and the County Surveyors are responsible for deciding if construction will be allowed within the right-of-way of legal drains.

The County Surveyor is also responsible for preparing and making standards of design, construction and maintenance that apply to all legal drains, supervising all improvement and maintaining records.

POLITICAL JURISDICTION: Indiana

Title or Reference: Counties

Implementing Agency: Counties

Affected Land Use Activities: All categories

Purpose:

To regulate use of land.

Provisions:

1. Provides counties with the authority to establish planning commissions and to formulate zoning controls and subdivision standards as well as prepare comprehensive plans for community development.

2. Authorizes the establishment of county planning commissions.

3. Stipulates that county planning commissions have jurisdiction in all unincorporated areas and in municipalities that have elected to "join" the County Plan Commission. In such an instance the municipality would not establish a separate plan commission.

4. Authorizes the county commissioners of a county in which a sewage disposal facility is located to acquire the facility, subject to the approval of the acquisition by the county council, except that the county commissioners may not acquire any facility already acquired by any city or town. The county commissioners can acquire the sewage disposal facility by: (a) gift, grant, purchase or condemnation that is funded in the same manner that cities and towns fund sewage treatment acquisition under IC 19-2-5, or by (b) a lease arrangement that is funded in the same manner that cities and towns fund leases of sewage disposal facilities under IC 19-2-5.5. After acquisition, the county commissioners are empowered to repair, operate, and maintain the sewage disposal facility and charge user fees for these services.

5. Provides county governments with the power to administer the permit system for installation of septic tank systems and the drainage of water from land. While the County Drainage Board can undertake projects to improve drainage and indirectly have some affect on soil erosion, their jurisdiction does not extend beyond 75 feet of the walls of the drainage ditch for regulatory purposes.

Administrative Responsibilities:

County governments are responsible for enacting zoning control, subdivision standards, developing comprehensive plans and administering a permit system for installing septic tank systems.

POLITICAL JURISDICTION: Indiana

Title or Reference: Flood Control Act, Chap. 318, Acts of 1945 as amended by P.L. 122, HEA 1156, Acts of 1976

Implementing Agency: Natural Resources Commission

Affected Land Use Activities: Shoreland and riverbank erosion

Purpose:

To prevent and limit floods, all flood control works and structures, the alteration of natural or present water courses of all rivers and streams in the State.

Provisions:

1. States that the Commission adopt, pursuant to methods provided by law, from time to time, rules and regulations for the transactions of its business and for the administration and exercise of its powers and duties.

2. Requires each county agent, city engineer, county engineer, and county surveyor, in the State, and each agency of the State to obtain, provide and/or furnish such pertinent data and information as may be requested by an order of the Commission, subject to the approval of the Governor.

3. Provides the Commission with the power to utilize any agency of the State in connection with its investigation, studies and preparation of plans or the performance of other duties, to employ such technical experts, engineers, clerical and other assistants as shall be necessary, and through the State Purchasing Agent to purchase such supplies, equipment, instruments and machinery as it shall deem necessary to perform its duties.

4. Authorizes the Commission, its agents, engineers, surveyors and other employees to enter upon any lands, or waters in the State for the purpose of making any investigation, examination or survey contemplated hereby.

5. Empowers the Commission to conduct hearings at which one or more of the Commissioners shall preside. Each Commissioner shall have the power to administer oaths. The Commission shall have the power to obtain information for its purposes from any person, including the power to issue subpoenas to require the attendance of witnesses and to examine witnesses under oath.

6. Stipulates that the title to all lands, easements, flood easements, or other interest therein, or other property or rights, acquired by the Commission shall be approved by the Attorney-General of Indiana and taken in the name of the State of Indiana.

7. Provides the Commission with the right to exercise the power of eminent domain.

8. Stipulates that the Commission shall make a comprehensive study and investigation of all pertinent conditions of the areas in the State affected by floods; determine the best method and manner of establishing flood control, giving consideration to the reservoir method, the channel improvement method, the levee method, the flood plain regulation method and any other practical method; adopt and establish a comprehensive plan or master plan for flood control for all areas of the State subject to floods; determine the best and most practical method and manner of establishing and constructing the necessary flood control works; and adopt appropriate measures for the prevention of flood damage. The Commission may construct flood control works or any part thereof. The Commission is authorized to perform such duties in cooperation with any person or agency of this State, with other states or agency thereof or with the United States or any agency of the United States.

9. Empowers the Commission to represent and act for and in the behalf of the State of Indiana, subject to the approval of the Governor, in all matters of flood control and the water resources of the State with the United States, or any agency of the United States, and with any other state or agency thereof; to cooperate with, obtain, approve and/or accept any flood control works from and through the Corps of Engineers of the United States Army; and to cooperate with and obtain, approve and/or accept any works or grant of any character or description from and through any agency of the United States relating to flood control and water resources, and to administer the expenditures of funds in connection therewith.

10. Prohibits any person from erecting, using or maintaining in or on any floodway, a permanent abode or place of residence, or to erect, make, use or maintain any structure, obstruction, deposit or excavation in or on any floodway, or to suffer or permit any structure, obstruction, deposit or excavation to be erected, made, used or maintained in or on any floodway, which will adversely affect the efficiency of or unduly restrict the capacity of the floodway or which, by virtue of its nature, design, method of construction, state of maintenance or physical condition, will constitute an unreasonable hazard to the safety of life or property, or result in unreasonably detrimental effects upon the fish, wildlife and botanical resources and the same are declared to be and to consitute public nuisances.

140

11. Authorizes the Commission with the power to commence, maintain and prosecute any appropriate action to enjoin or abate a nuisance, including any of the foregoing nuisances and any other nuisance which adversely affects flood control or the safety of life or property, or is unreasonably detrimental to fish, wildlife and botanical resources.

12. Stipulates that all works of any nature for flood control in the State, which are hereafter established and constructed, shall be coordinated in design, construction and operation, according to sound and accepted engineering practice so as to effect the best flood control obtainable throughout the State. No person shall construct or install any works of any nature for flood control and no Court shall enter the final order or judgement establishing or ordering such works constructed, unless and until the proposed works and the plans and specifications therefor are approved by the Commission. The interested parties shall file a verified written application with the Commission therefor, and the Commission shall consider all the pertinent facts relating to the proposed works which will affect flood control in the State and shall determine whether the proposed works in the plans and specifications will be in aid of and acceptable as part of, or will adversely affect and interfere with the flood control in the State, and shall enter an order approving or disapproving the application, plans and specifications. In the event of disapproval, the order shall set forth the objectionable features so that the proposed works and the plans and specifications therefor may be corrected or adjusted to obtain the approval of the Commission.

13. Provides the Commission with the power to remove or eliminate any structure, obstruction, deposit or excavation in any floodway which adversely affects the efficiency of or unduly restricts the capacity of the floodway or which constitutes an unreasonable hazard to the safety of life or property, or is unreasonably detrimental to fish, wildlife, and botanical resources by an action in condemnation, and in assessing the damages in such proceedings, the appraisers and the Court shall take into consideration whether the structure, obstruction, deposit or excavation is lawfully in or on the floodway.

Administrative Responsibilities:

The Natural Resources Commission is responsible for administering the Act. The Department of Natural Resources is the staff to the Commission.

POLITICAL JURISDICTION: Indiana

Title or Reference: Flood Plain Management Act (PL 123, Act of 1973)
Rule Number FPM-1

Implementing Agency: Natural Resources Commission

Affected Land Use Activities: Lakeshore and Riverbank Erosion

Purpose:

To enact and implement a state flood plain management program for the purpose of decreasing existing flood damages, mitigating future flood damages, and promoting the health, safety, and general welfare of the people of Indiana.

Provisions:

1. Authorizes the Natural Resources Commission to develop and promulgate appropriate rules and regulations, including consideration of nonconforming uses as minimum standards for the delineation and regulation of all flood hazard areas within the State of Indiana. The production of crops, pasture, forests, and park and recreational uses shall be considered as conforming uses by the Commission and all local units. These specific conforming uses shall be included as minimum standards in the adoption of rules and regulations governing all flood hazard areas within the State.

2. Authorizes local units of government to delineate and regulate all flood hazard areas within their respective jurisdictions by adopting and implementing all ordinances, rules and regulations necessary therefore pursuant to procedures established by law; provided, however, that for ordinances, rules and regulations adopted on or after July 1, 1974, such rules and regulations shall not be less restrictive than the minimum rules and regulations of the commission and that such rules and regulations shall have the approval of the commission prior to their effective date; and provided further, that nothing contained in this chapter shall be construed as preventing any local unit from adopting rules and regulations that are more restrictive than the minimum rules and regulations promulgated by the commission.

3. Authorizes the Commission to provide technical data and information and otherwise assist any local unit in the identification and delineation of all flood hazard areas within the jurisdiction of that local unit, and in the preparation of all necessary ordinances, rules and regulations therefor. The Commission is authorized to cooperate with any state, regional, local, or federal board, commission or agency in the preparation of necessary information or data.

4. Provides minimum standards for the delineation and regulation of all flood hazard areas for all rivers or streams in the State of Indiana.

5. States that the degree of flood protection required by this rule is considered reasonable for regulatory purposes and is based on engineering and scientific considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice or debris jams. This rule does not imply that areas outside flood hazard areas, as defined herein, will be free from flooding or flood damages. This rule does not create liability on the part of the State of Indiana, the Commission or any local unit, or any elected or appointed official or employee thereof for any flood damages that result from reliance on this rule or any administrative decision lawfully made thereunder.

6. States that all flood hazard areas within the State of Indiana are hereby divided into two districts: Flood way District and Floodway Fringe District.

   The Commission may upon its own initiative or upon petition from a local unit, determine and delineate on suitable maps, the boundaries of each district within the jurisdiction of that local unit. In cases of determination and delineation by others, all such determinations and delineations will be subject to Commission review and approval.

7. Stipulates that flood hazard areas shall be delineated in the following manner. The magnitude of the peak discharge of the regulatory flood of any river or stream shall be established. Using this discharge, the regulatory flood profile shall then be determined. The aerial extent of flood hazard areas shall then be delineated using appropriate elevations from the regulatory flood profile and the best available maps.

8. States that the following land uses have acceptable low flood damage potential and shall not require a permit for construction in the floodway from the Commission under the provisions of IC 1971, 13-2-22, provided that they do not involve any structure, obstruction, deposit, or excavations. This list is intended to include examples of open space uses which will not adversely affect the efficiency of or unduly restrict the capacity of the regulatory floodway and are reasonably tolerant of the presence of flood waters.

   (a) Agricultural uses such as the production of crops, pastures, orchards, plant nurseries, vineyards, and general farming.

   (b) Forestry, wildlife areas, and nature preserves.

   (c) Parks and recreational uses, such as golf courses, driving ranges, and play areas.

9. Stipulates that all facilities, structures, and buildings normally found in a community, such as businesses, medical facilities, community and government buildings, industrial facilities, restaurants, commercial facilities, storage facilities, utility buildings, amusement facilities, residential buildings, and civic or fraternal facilities, may be constructed in a floodway fringe district, provided that the flood protection grade for all buildings shall be at least two feet above the regulatory flood profile. All local ordinances incorporating flood plain management provisions adopted after July 1, 1974, shall provide that this objective will be met.

10. Requires that all local ordinances incorporating flood plain management provisions adopted after July 1, 1974, shall provide for non-conforming uses. All land uses now existing in flood hazard areas not in full compliance with this rule shall be considered a non-conforming use. Except for normal maintenance, any building which constitutes a non-conforming use may be altered, repaired, enlarged, or extended, on a one-time-only basis, provided that such alternations, repairs, enlargements, or extensions do not increase the value of the building, excluding the value of the land, by more than forty percent (40%) of its pre-improvement market value, and the alterations, repairs, enlargements, or extensions are not otherwise prohibited or restricted by state law or local ordinances. Any building which constitutes a non-conforming use which is damaged by flood, fire, explosion, act of God, or the public enemy, may be restored to its original dimensions and condition, provided the damage does not reduce the value of the building, excluding the value of the land, by more than forty percent (40%) of its pre-damaged market value. Any repairs, alterations, enlargements, or extensions of any existing non-conforming use which does not involve a building is subject to the provisions of this rule.

11. Stipulates that a local unit shall not issue a permit for any structure, obstruction, deposit, or excavation within any flood hazard area or portion thereof which lies within a floodway without the prior written approval of the commission as provided for in said law.

Administrative Responsibilities:

The Natural Resources Commission is responsible for adopting all necessary rules and regulations and providing technical assistance to local units of government with regard to Flood Plain Zoning. The Commission uses the staff of the Department of Natural Resources to enforce its authorities. The Commission is also responsible for the delineation of the boundaries of the regulatory floodway as provided by law. Local units of government are encouraged to adopt regulations and ordinances regulating flood hazardous areas.

POLITICAL JURISDICITON: Indiana

Title or Reference: Natural Resources Act of 1965

Implementing Agency: Department of Natural Resources; Indiana Natural Resources Commission

Affected Land Use Activities: All Categories

Purpose:

To conserve the natural resources and historical landmarks of the State and provide recreational areas.

Provisions:

1. Provides the Indiana Natural Resources Commission with the authority to issue permits for construction in floodways in Indiana under the Flood Control Act (I.C. 13-2-22). This authority is directed to construction, excavation, or alteration in floodways which affect flood control or the safety of life or property. In issuing permits, the Commission may make permits subject to restrictions or conditions on how alteration of streams may be carried out to minimize the disturbance to streams and stream quality.

2. Makes it unlawful to erect, use, or maintain in or on any floodway a permanent residence or to erect, make, use, or maintain any structure, obstruction, deposit, or excavation in or on any floodway.

3. Makes it unlawful to permit any structure, obstruction, deposit, or excavation which would adversely affect the efficiency or unduly restrict the capacity of the floodway.

4. Requires any person who desires to erect within the floodway or excavate within the floodway, to submit a written application to the Commission setting forth the plans and specifications of the structure, excavation, etc. If the Commission feels that such a structure, obstruction, or excavation will not adversely affect the efficiency, will not unduly restrict the capacity of the floodway, or will not constitute an unreasonable hazard, they may authorize such construction or excavation. However, the Commission may incorporate into that authorization any conditions, restrictions, or regulations that it deems necessary for the purposes of the Act.

5. Prohibits the construction or installation of any works of any nature for flood control unless such proposed works and plans of specifications are approved by the Commission. In addition, no court can enter the final order or judgement establishing or ordering such work constructed without approval by the Commission.

6. Authorizes the Department of Natural Resources to have jurisdiction over all public and private waters in the State, as well as adjoining lands necessary for flood control purposes. Any construction proposed within the 100-year flood plain is subject to DNR approval.

Administrative Responsibilities:

The Indiana Natural Resources Commission is responsible for construction within designated floodway zones. The administration of floodway construction permits is handled by the Division of Water of the State Department of Natural Resources with the approval of the Indiana Natural Resources Commission.

POLITICAL JURISDICTION: Indiana

Title or Reference: Indiana Pesticide Use and Application Law
Draft Regulations

Implementing Agency: Pesticide Review Board State Chemist

Affected Land Use Activities: Agricultural: pesticide, recreation: pesticide.

Purpose:

To control the use and application of pesticides.

Provisions:

1. Requires any person who may use or supervise the use of any pesticide, the use of which is restricted to application by certified applicator, to be certified.

2. Authorizes the Pesticide Review Board, after a public hearing, to adopt rules and regulations prescribing policy and procedures relating to the use and application of pesticides.

3. Authorizes the state chemist to prescribe standards for the certification of applicators of pesticides. Each category is subject to separate testing procedures and requirements.

4. Prohibits any person from engaging in the business of applying pesticide to the property of another for hire at any time without a pesticide operators license issued by the state chemist.

5. Details the application procedure.

6. Requires that employees of all State agencies, municipal corporations, or any other government agency obtain a permit if the employee uses or supervises the use of any restricted pesticides in the course of their duties.

7. Stipulates that no private applicator shall be issued a permit to apply a pesticide classified for restricted use without first complying with the certification requirements determined by the state chemist as necessary to prevent unreasonable adverse effects on the environment, including injury to the applicator or other persons.

8. States that any person aggrieved by any action of the state chemist may obtain a review by filing with the board, within thirty days' notice of the action, a written petition asking that the action of the state chemist be set aside. A copy of the petition shall be furnished

to the state chemist by the board within seven days of filing. Within fifteen days thereafter the state chemist shall certify and file with the board a transcript of any record pertaining thereto, including a transcript of evidence received. Whenever a hearing is provided for or authorized to be held by the board, the board may designate a person or persons as its agents or representatives to conduct such hearings. Such agents or representatives shall conduct such hearings in the manner provided by IC 1971, 4-22-1. The board shall, after hearing the appeal have jurisdiction to affirm, set aside, or modify the action of the state chemist, except that the findings of the state chemist as to the facts, supported by the substantial evidence, shall be conclusive.

9. Stipulates that any person who violates the provisions of this chapter, or who impedes, hinders, or otherwise prevents, or attempts to prevent the state chemist or his duly authorized agent in performance of his duty shall be fined not more than one thousand dollars ($1,000) for the first offense and not more than five thousand dollars ($5,000) for each subsequent offense.

10. Authorizes the state chemist with the power to enter upon any public or private property at reasonable times, in order to:

    a. Observe the use and application of a pesticide;

    b. Inspect any equipment subject to this chapter;

    c. Inspect and sample property actually or reported to be exposed to pesticides;

    d. Inspect storage or disposal areas;

    e. Inspect or investigate complaints of injury to humans or property;

    f. Sample pesticides being applied or to be applied. If the state chemist is denied access to any property for the purposes set forth in this chapter, he may, upon showing a need, apply to any court of competent jurisdiction for a search warrant authorizing access to the property for said purposes. The court may, upon such application and after finding a need, issue the search warrant for the purposes requested.

11. Requires licensed commercial operators and licensed public applicators to maintain records with respect to application classified for restricted use.

12. Prohibits persons from transporting, storing, or disposing of any pesticide or pesticide containers in such a manner as to cause injury to humans, beneficial vegetation, crops, livestock, wildlife, beneficial insects or to pollute any waterway in a way harmful to any wildlife therein. The board may promulgate regulations governing the storing and disposal of such pesticides or pesticide containers. In determining these standards, the baord shall take into consideration any regulations issued by the U.S. Environmental Protection Agency.

Draft Rules and Regulations Under the Indiana Pesticide Use and Application Law 1-3

13. Categorizes licenses and certificates.

14. Describes in detail supervision of noncertified applicators.

15. Details the information required of commercial applicators for recording purposes.

Administrative Responsibilities:

The Pesticide Review Board is responsible for prescribing policies and procedures relating to the use and application of pesticides, reviewing actions of the State chemist, and promulgating regulations governing the storing and disposal of pesticides or containers. The state chemist is charged with prescribing standards for certification of applicators of pesticides, use, and holding and issuing pesticide operator licenses.

POLITICAL JURISDICTION: Indiana

Title or Reference: Draft Soil Erosion and Sedimentation Control Act

Implementing Agency: State Soil and Water Conservation Committee

Affected Land Use Activities: Erosion

Purpose:

To provide for an acceleration and extension of the program for control of soil erosion and sediment damage resulting from land disturbing activities within the State; to improve water quality; to provide for adoption of a comprehensive Statewide soil erosion and sediment control program and guidelines and for adoption by soil and water conservation districts of soil erosion and sediment control programs consistent with such Statewide program and guidelines; to require the filing and approval of plans for the control of soil erosion and sediment damage in connection with land disturbing activities; to provide for a complaint procedure to declare certain acts to be unlawful; to provide for administration and enforcement; to provide for financial and other assistance to districts and the State Soil and Water Conservation Committee for the purposes of this Act.

Provisions:

1. Directs the State Soil and Water Conservation Committee tc develop and coordinate a comprehensive State erosion and sediment control program.

2. Stipulates that the Committee shall, within one year following the appointment of an advisory board, develop guidelines which shall:

    a. Set forth erosion and sediment control practices and specifications which when properly applied will reduce soil loss to the tolerated amount;

    b. Include a list of permanent erosion and sediment control measures for which the cost is greater than the return to the owner and specify the amount of financial assistance to be made available;

    c. Include such survey of lands and waters as may be deemed appropriate by the Committee or required by any applicable law to identify areas, including multi-jurisdictional and watershed areas, with critical erosion and sediment problems.

150

3. Stipulates that the standards developed by the Committee will be considered as minimum standards for district programs and shall become effective upon their promulgation.

   a. At any time thereafter, districts wishing to establish more stringent standards or to revise standards to conform to minimum State guidelines shall notify the State Committee of its desire to do so and shall name an advisory board of not less than seven (7) nor more than eleven (11), including representatives from the areas to be affected by the revised standards. Within 90 days after the notice to the Committee, the district shall give due notice and conduct a public hearing on the proposed district standards. After the public hearing, the district shall propose an ordinance, based on the standrads, to the proper local unit of government. All local units are hereby authorized to regulate all land disturbing activities within their respective jurisdictions by adopting and implementing all ordinances, rules and regulations necessary therefore pursuant to procedures established by law.

   b. The district erosion and sediment control program is contingent upon receipt of adequate funds. The districts are hereby authorized and shall establish priorities on local distribution of cost-sharing funds.

   c. The responsibilities granted to supervisors by this Act are considered an extension of the powers of districts and supervisors as granted in the Soil and Water Conservation Districts Act.

4. Prohibits any person from engaging in a land disturbing activity until he has an approved plan for erosion and sediment control.

5. States that upon promulgation of standards by the Committee, State agencies and local units authorized under any other law to issue grading, building, or other permits shall not issue such permits involving land disturbing activities unless the applicant submits with his application an erosion and sediment control plan approved by the district, or by the Committee where appropriate, and his certification that such plan will be followed. These requirements are in addition to all other provisions of law relating to the issuance of such permits and are not intended to otherwise affect the requirements for such permits.

6. Provides the district, the Committee, their representatives, investigators, and other employees with the authority to enter upon any lands or waters in the State for the purpose of making any investigation, inspection, examination or survey contemplated in this Act.

7. Authorizes the district, the Committee, and the local unit to cooperate and enter into agreements, financial or otherwise, for the purpose of carrying out any of the provisions of this Act.

8. Authorizes the district and the Committee to cooperate and enter into agreements with any federal agency in connection with plans for erosion and sediment control with respect to land disturbing activities on lands which are under the jurisdiction of such federal agency.

9. Authorizes the Committee, the districts, and the local unit to receive from federal, State, or other public or private sources financial, technical, or other assistance for use in accomplishing the purposes of the Act.

Administrative Responsibilities:

The State Soil and Water Conservation Committee is responsible for promulgating all necessary rules and regulating and enforcing the provisions of the Act.

POLITICAL JURISDICTION: Indiana

Title or Reference: Towns and Cities Enabling Legislation

Implementing Agency: Towns, cities

Affected Land Use Activities: All categories

Purpose:

To regulate programs in water quality, planning and the land uses and types of structures built as site amenities.

Provisions:

1. Empowers cities and towns to enact ordinances and regulations pertaining to the provision of and operation of sewage treatment, as well as water supply systems and construction activities.
2. Stipulates that the cities' jurisdiction of the waterworks extends up to 25 miles from the corporate limits for the purpose of prevention and control of any pollution of the water supply.
3. Authorizes cities and towns to establish planning commissions to formulate zoning controls and subdivision standards and prepare comprehensive plans for community development.
4. Stipulates that city and town planning commissions have jurisdiction over the contiguous unincorporated areas within two miles of their corporate limits providing they choose to exercise this extra-territorial authority.

Administrative Responsibilities:

Local governments (cities and towns) may enact zoning ordinances, subdivision regulations, provide sewage treatment and water supply systems and establish planning commissions.

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THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK TO CONTROL POLLUTION FROM LAND USE ACTIVITIES IN THE UNITED STATES GREAT LAKES BASIN

THE STATE OF MICHIGAN

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IN SUBCONTRACT TO
GREAT LAKES BASIN COMMISSION
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155

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TABLE OF CONTENTS

PART I -- PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTER 1 INTRODUCTION 1

1.1 GENERAL 1

CHAPTER 2 DEFINITIONS AND METHODOLOGY 4

2.1 GENERAL 4

2.2 LAND USE ACTIVITIES 4

2.3 CONTROL COMPONENTS 5

2.4 METHODOLOGY 6

CHAPTER 3 INSTITUTIONAL AND LEGISLATIVE FRAMEWORK 9

3.1 GENERAL 9

3.2 INSTITUTIONAL STRUCTURE 9

3.2.1 Natural Resources Commission 10

3.2.2 Water Resources Commission 10

3.2.3 Department of Natural Resources 10

3.2.4 Department of Public Health 13

3.2.5 Department of Agriculture 13

3.2.6 Department of State Highways and Transportation 13

3.2.7 Department of Treasury, Municipal Finance Commission 13

3.2.8 Office of the Attorney General 14

3.2.9 Department of Management and Budget 14

3.2.10 Regional Planning Agencies 15

3.2.11 County Board of Commissioners 17

3.2.12 County Board of Health 17

3.2.13 County Drainage Commission 18

157

3.2.14 County Road Commission 19

3.2.15 County Planning Commission 19

3.2.16 County Department of Public Works 20

3.2.17 Soil Conservation District 20

3.2.18 Designated Act 347 Agency 21

3.2.19 County Agricultural Stabilization and Conservation Committee 21

3.2.20 Local Governments 21

3.3 LEGISLATIVE FRAMEWORK 24

3.3.1 Urban Areas 24

3.3.2 Agriculture 34

3.3.3 Liquid, Solid and Deepwell Disposal 41

3.3.4 Transportation Corridors 46

3.3.5 Shoreline Landfilling 47

3.3.6 Extractive Operations 49

3.3.7 Recreation Areas 52

3.3.8 Lakeshore and Riverbank Erosion 53

3.3.9 Forested Areas 53

CHAPTER 4 FRAMEWORK ANALYSIS 60

4.1 GENERAL 60

4.2 STRENGTHS, WEAKNESSES AND FUTURE ACTIONS 60

4.2.1 Urban Construction Site Runoff 60

4.2.2 Urban Stormwater Runoff 61

4.2.3 Erosion from General Farm Practices 62

4.2.4 Solid Waste 62

4.2.5 Private Sewage Systems 62

158

PART II -- SUMMARIES OF LEGISLATION

CHAPTER 5 RELEVANT LEGILSATION 66

5.1 GENERAL 66

159

PART I

PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTERS 1 and 2

(Refer to Chapters 1 and 2, State of Illinois, pages 1 - 8)

CHAPTER 3

INSTITUTIONAL AND LEGISLATIVE FRAMEWORK

3.1 GENERAL

This Chapter presents the institutional structure and legislative framework for nonpoint pollution control in the State of Michigan. Section 3.2 identifies the institutions involved in nonpoint pollution control and presents brief descriptions of the key institutions.

Section 3.3 presents the legilsative framework in matrix form, followed by a discussion of the magnitude of the problem, current activities and evaluation of the controls and their implementation.

3.2 INSTITUTIONAL STRUCTURE

Different State and substate agencies share pollution control responsibilities in Michigan. Table I presents those agencies. An asterisk indicates the key governmental units.

TABLE I

AGENCIES WITH NON-POINT POLLUTION CONTROL RESPONSIBILITIES

STATE	SUBSTATE
*Department of Natural Resources	Regional Planning Agencies
*Department of Public Health	*Counties
*Department of Agriculture	*County Drain Commission
Department of State Highways and Transportation	County Road Commission
Department of the Treasury, Municipal Finance Commission	*Soil Conservation Districts
Office of the Attorney General	*Cities
Department of Management and Budget	*Villages
*Natural Resources Commission	Townships
*Water Resources Commission	Health Districts

Descriptions of the key State and substate governmental units follows:

3.2.1 Natural Resources Commission

In Michigan, the Natural Resources Commission (NRC) is responsible for basic policy-making in the area of environmental management. The commission is responsible for most of the programs administered by the Department of Natural Resources and the other commissions which act in an advisory capacity to the NRC. Although Executive Order 1976 has centralized NRC's authority, the Water Resources Commission and the Air Pollution Control Commission retain their independent quasi-judicial function and their rule-making functions. Furthermore, the authority of these Commissions to issue permits regulating water pollution and air pollution remains unchanged. Except for these powers, the two Commissions serve the NRC in an advisory capacity.[1]

3.2.2 Water Resources Commission

The Water Resources Commission (WRC) consists of seven members, four of whom serve by virtue of other offices they hold. They are the Directors of the Departments of Natural Resources, Public Health, State Highways, and Agriculture. The other three members are appointed by the Governor, with the approval of the Senate, for three-year, staggered terms. They represent industrial, conservation, and municipal interests.

The WRC has the authority to protect and conserve the water resources of the State and has control over the pollution of surface and groundwaters and the waters of the Great Lakes. The Commission is responsible for establishing water quality standards for the State and administering the Liquid Industrial Waste Haulers and Watercraft Pollution Control Acts. Furthermore, in matters of flood control, the Commission has authority over the alterations of natural and artificial watercourses of all rivers and streams. It also regulates the amount of pollution discharged and administers the Water Resources Act amendments on facility inspections. The Commission additionally administers Federal and State grant-in-aid programs.

The WRC is the designated State agency to cooperate and negotiate with other governments, governmental units, and agencies in matters concerning the water resources of the State, including flood control and beach erosion control.[2]

3.2.3 Department of Natural Resources

The Department of Natural Resources (DNR) is responsible for protecting, conserving, and managing the natural resources of the State. The programs undertaken by the DNR relate to planning, coordination, regulation, monitoring, data collection, setting of standards, conduct of special studies or inventories, and the management of lands and waters of the State. The Department is divided into five bureaus:[3]

163

- Bureau of Environmental Protection
- Bureau of Land and Water Management
- Bureau of Renewable Resource Management
- Bureau of Recreation
- Bureau of Management Services

3.2.3.1 Bureau of Environmental Protection

The Bureau of Environmental Protection is responsible for the administration and coordination of State activities involving water quality, air quality, and resource recovery. The divisions of the Bureau are:

- Water Quality Control Division
- Environmental Services Division
- Resource Recovery Division
- Air Quality Division

Water Quality Control Division

The Water Quality Control Division is responsible for administering Michigan's water pollution control program. The Division's primary functions include:

- regulation of wastewater discharges through the issuance and enforcement of municipal and industrial discharge permits and through licensing of haulers of liquid wastes;

- water quality planning, program development and implementation, and surveillance of water pollution problems;

- administration of the construction grants program, which awards State and Federal funds for the design and construction of publicly-owned treatment works;

- training and certification of treatment plant operators and provision of technical assistance in plant operation and maintenance.

Environmental Services Division

The Environmental Services Division is responsible for the environmental laboratory, environmental monitoring, program planning, surveillance fee coordination, and tax exceptions for pollution control facilities.

Resource Recovery Division

The Resource Recovery Division is responsible for administering the State's solid waste management control program. Its duties include consultation and control of programs dealing with solid waste management as they relate to planning for refuse processing, resource recovery, transportation, and disposal.[4]

3.2.3.2 Bureau of Land and Water Management

The Bureau of Land and Water Management is responsible for the DNR's interests in land resources planning and management. The Bureau is divided into four divisions:

- Land Resources Program Division
- Lands Division
- Water Management Division
- Geology Division

Land Resources Program Division

The Land Resources Program Division administers the Coastal Zone Management Program, the Natural Rivers Program, the Soil Erosion and Sediment Control Program, the Farmland and Open Space Preservation Program and is responsible for development of a state land use plan.

Water Management Division

The Water Management Division administers the Federal Flood Insurance Program and in coordination with the Lands Division, the Great Lakes and Submerged Lands Act and the Inland Lakes and Streams Act.

3.2.3.3 Bureau of Renewable Resource Management

The Bureau of Renewal Resource Management administers all programs concerned with fish and wildlife. It also conducts all activities and programs relating to forestry. This Bureau is made up of the Forestry, Fisheries, Wildlife and Forest Fire Divisions.

3.2.3.4 Bureau of Recreation

The primary responsibility of the Bureau of Recreation is to develop recreational opportunities and facilities for the people of Michigan. The Bureau is divided into the Park, Recreation Services, and Waterways Divisions.

The Park Division is responsible for acquiring, maintaining, preserving, and making available for public use, open space and scenic areas.

The Recreation Services Division is responsible for providing technical services to develop, promote and coordinate local recreational programs and facilities.

The Waterways Division is responsible for developing and maintaining recreational boat facilities.

3.2.4 Department of Public Health

The Department of Public Health is the second most important agency managing water quality in the State. Its range of powers is matched only by that of the Water Resources Commission. The Department is responsible for regulating on-site sewage disposal systems in compounds, mobile home parks, and schools. It also coordinates the activities of local health departments in issuing permits for individual home septic tank systems.[5]

3.2.5 Department of Agriculture

The Department of Agriculture is responsible for administration of the intercounty aspects of the Drainage Code, which authorizes the formation of drainage districts and gives the Department jurisdiction over all intercounty districts. The Department works closely with elected county drainage commissioners and coordinates intercounty drain construction and planning. The majority of stormwater drainage improvements are carried out under the authority of county drain commissions.

The Soil and Water Management Division of the Department of Agriculture coordinates the Soil Conservation Program and works closely with the State Conservationist of the USDA Soil Conservation Service and the Soil Conservation Districts in each county. Also, the Director of the Department of Agriculture is a member of the Water Resources Commission.[6]

The Department also administers a pesticide and fertilizer registration and labeling programs. It also administers a licensing program for pesticide applicators.

3.2.6 Department of State Highways and Transportation

The Department of State Highways and Transportation is responsible for planning, coordinating, constructing, operating, and maintaining an adequate and integrated transportation system for the State. More specifically, the Department's activities include data collection and research and construction and maintenance of State highways. It is also involved with planning, coordinating and policy-making on matters related to State highways.[7]

3.2.7 Department of Treasury, Municipal Finance Commission

The Municipal Finance Commission's (MFC) primary function is to review and approve all borrowing by public corporations in the State of Michigan other than the State itself. In meeting this obligation, the Commission is responsible for approving the local bond issues needed to finance the local share of the construction costs associated with pollution control facilities which collect and treat sewage and stormwater.

Pollution abatement issues are exempt from the MFC's calculations of statutory percentage debt limitations. However, the MFC attempts to assure that the total debt remains below $600 per capita and 20 percent of State Equalized Valuation for all jurisdictions.[8]

3.2.8 Office of the Attorney General

The Office of the Attorney General provides legal services and staff to all State agencies. It acts as legal counsel for the Department of Natural Resources and its associated commissions in all administrative and judicial proceedings, including the initiation and enforcement of orders of abatement. Litigation may deal with plat matters; the prevention of environmental impairment; and violations occurring under various State laws and programs; such as the Inland Lakes and Streams Act; the Soil Erosion and Sedimentation Control Act, and the NPDES permit program. The Attorney General's office is also involved in proceedings of the Michigan Environmental Reveiw Board and review for adequacy of all environmental impact statements prepared by any agency of State government.[9]

3.2.9 Department of Management and Budget

The Department of Management and Budget, Office of Intergovernmental Relations (IGR), provides the Governor and key advisors with the economic and tax information required to make timely and rational decisions; develops and maintains coordinative and analytical processes that focus on Federal and State Programs and actions having impact on State and local governments; and provides assistance, coordination, evaluation, and recommendations that will enable assigned advocacy units to use their resources as effectively as possible in achieving their stated objectives. Programs include administration of Federal grants for comprehensive planning assistance through the HUD 701 Program, regional planning and development grant program, Federal and State revenue projections, economic analysis, coordination of Federal programs and information and intergovernmental liaison.

As part of the latter, the IGR serves as the State clearinghouse for procedures called for by the Federal Office of Management and Budget Circular No. A-95. The IGR is involved in State 208 related meetings and was a proponent of a regional approach to development of 208 plans in lieu of utilizing the concept of a basin approach.[10]

3.2.10 Regional Planning Agencies

At the regional level, there are fourteen designated water quality planning agencies that participate in the development and improvement of water quality. Each of these agencies is also a comprehensive planning agency involved in HUD comprehensive planning programs including environmental quality, transportation, housing, economic development, A-95 review and coastal zone management studies. The agencies maintain relationships with the state and local governments within their geographical areas. They provide a regional perspective to these units of government and technical assistance to many, especially the smaller, local units of government. The geographic areas of each agency are depicted in Figure 1. They are the following:

Region 1
Southeast Michigan Council of Governments

Region 2
Region 2 Planning Commission

Region 3
Southcentral Michigan Planning & Development Council of Region III

Region 4
Southwestern Michigan Regional Planning Commission

Region 5
GLS Region V Planning & Development Commission

Region 6
Tri-County Regional Planning Commission

Region 7
East Central Michigan Planning & Development Regional Commission

Region 8
West Michigan Regional Planning Commission

Region 9
Northeast Michigan Council of Governments

Region 10
Northwest Michigan Regional Planning and Development Commission

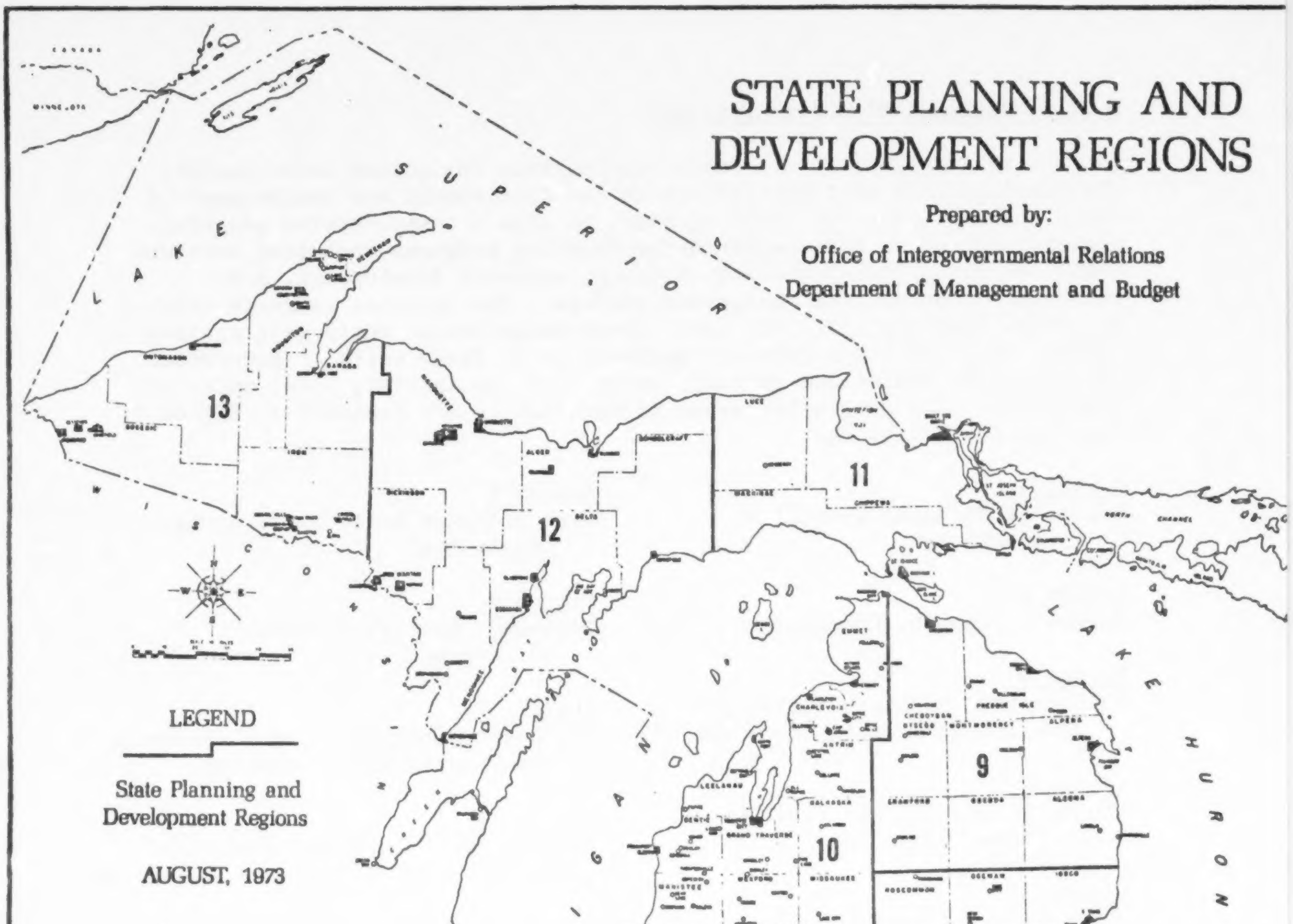
Region 11
Eastern Upper Peninsula Regional Planning and Development Commission

Region 12
Central Upper Peninsula Planning and Development Regional Commission

Region 13
Western Upper Peninsula Planning and Development Region Commission

Region 14
West Michigan Shoreline Regional Development Commission

FIGURE 1



STATE PLANNING AND DEVELOPMENT REGIONS

Prepared by:

Office of Intergovernmental Relations

Department of Management and Budget

LEGEND

State Planning and Development Regions

AUGUST, 1973

LAKE SUPERIOR
LAKE MICHIGAN
LAKE HURON
LAKE ERIE
NORTH CHANNEL
WISCONSIN
INDIANA
OHIO
CANADA
MINNESOTA
1
2
3
4
5
6
7
8
9
10
11
12
13
14
DETROIT
ONTARIO
CANADA
DETROIT METROPOLITAN AREA

3.2.11 County Board of Commissioners

The County Board of Commissioners is the governing board and policy approval center of county government. Therefore, it takes on many of the characteristics of a legislative body, even though it also has a number of administrative responsibilities. While many of its powers, duties, and responsibilities are prescribed by law and diffused through the widespread use of commissions, boards, committees, and independently elected officers, the Board is in charge of the development and approval of county policy. The county, as a unit of government, is considered an agent for the State; and its activities are limited to those duties and responsibilities given by the constitution and State laws.

Members of the County Board are elected for two-year terms on a partisan basis from single-member districts. The districts are required to be approximately equal in population and must be apportioned by a county apportionment commission after each federal decennial census.

The legal power of the county board to adopt ordinances is limited. County ordinances must relate to "purely county affairs", must not be counter to the general laws of the State, and must not interfere with local affairs of any township, city or village in the county. In addition, because counties do not have the power to regulate for the health, safety, and welfare of county residents, and have only those powers specifically granted by State law, the County Board is severely limited in its ordinance-making power. The County Board, therefore, usually acts by adopting resolutions.[11]

County Boards are authorized to establish Planning Commissions, the function of which is to plan for the integrated development of each county and the programming of capital improvements. Counties are also provided with the authority to plan, design, construct, and operate sewage treatment facilities; incur short-term and long-term indebtedness; impose user charges; accept grants; and accept both industrial and municipal wastes for treatment.[12]

3.2.12 County Board of Health

Health programs in Michigan are usually administered by county departments of public health. Cities, villages, and townships, for the most part, have relinquished, or now share with counties, the active administration of public health activities. County involvement in health programs was optional prior to 1965; but it became mandatory for county governments to take on the responsibility, either by creating their own health boards, or by joining a district health department. This requirement also eventually led to the establishment of joint city-county health departments in the more heavily urbanized counties.

County health departments are governed by five persons appointed by the Board of County Commissioners to serve terms of five years. County Commissioners may be members of the Boards of Health. At least one member must be a physician.

Activities of the health boards relevant to water quality are generally conducted by the environmental health section of the department, which must have a registered sanitarian. The State act regulating registration (Act 147 P.A. of 1963) of sanitarians requires applicants to take an examination and have adequate training in the biological or health sciences. The environmental health sections are responsible for testing water supplies (under Act 294 P.A. of 1966 and Act 46 P.A. of 1919); and regulating mobile home parks (under Act 243 P.S. of 1959), campgrounds (under Act 171 P.A. of 1970), and sewage disposal facilities Health Departments are only responsible for these systems under 10,000 gallons per day (GPD) capacity which utilize subsurface discharge . The Department inspects the installation of septic tanks and carries out other on-site enforcement activities of the county sanitary code and various appropriate State laws (privies, Act 136 P.A. of 1881; outhouses, Act 273 of 1939, as amended; septic tanks, seepage pits or cesspools, Act 243 P.A. of 1951, as amended).[13]

3.2.13 County Drain Commissioners

Within each county, drainage areas have been established and are administered by an elected County Drain Commissioner who serves a four-year term. The Drain Commissioner has jurisdiction over all drains within the county and shared jurisdiction over intercounty drains. The primary function of the Drain Commissioner is to construct and maintain facilities to alleviate or prevent drainage problems. The Drain Commissioner may also engage in construction and operation of sanitary sewerage projects.

A County Drainage District may be established on petition of ten freeholders (resident landowners) of the township(s) to be affected. Ordinarily, five of the signatures must be from people to be included in the drainage district, but only one is required if the total number of landowners in the district is twenty or less. When a drainage district is required for reasons of protecting the public health, a city, village, and township, by resolution of its governing body, or the county board of health, may make application for the establishment of a district.

To initiate an action with respect to the actual construction of a drainage facility, a petition is required to be signed by two-thirds of the freeholders whose land will be transversed by the drain. After receiving a qualified petition, the Drain Commissioner may first apportion the benefits of such a drain to the affected property owners, and then appoint a Board of Determination. The Board of Determination, which must consist of three disinterested persons who are residents of the county, but not of the township in which the district is located, must hold a hearing and decide on whether or not the drainage work is necessary.

The Commissioner may then secure the necessary easements and waivers of damages. If certain property owners do not grant easements and waivers, Drain Commissioners can request the probate judge to appoint special commissioners, who will investigate individual cases and determine remuneration (S 280.73). After all easement and damage matters are settled, the Drain Commissioner may issue a "final order of determination". The Drain Commissioner then notifies individuals and political subdivisions regarding their portion of the cost for which they will be assessed. In cases of appeals, the Drainage Board of Review may make changes in the apportionment of the benefits considered appropriate.[14]

Drainage areas involving more than one county become Intercounty Drainage Districts, administered by an Intercounty Drainage Board, composed of the County Drain Commissioners of those counties affected, and the Director of the Michigan Department of Agriculture, or his deputy, who serves as Chairman.

A Drainage Board is established to oversee each intracounty drain project undertaken by the Drain Commissioner. The membership of each board is identical and fixed by the Drain Code: the Drain Commissioner serves as Chairman; other members are the Chairman of the Board of County Commissioners and the Chairman of the Board of County Auditors (or of the Finance Committee, if no Board of Auditors exists).

The Drain Commission may also be designated to oversee the activities of the County Department of Public Works

3.2.14 County Road Commission

The County Road Commission is responsible for the planning, development, and management of the roads in the unincorporated portions of the county and for some roads inside cities and villages.

County Road Commissions are comprised of three individuals who serve terms of six years. Road Commissioners in most counties are appointed by the Board of County Commissioners.[15]

3.2.15 County Planning Commission

County Planning Commissions may be established by action of the County Board of Commissioners, and the law states that their establishment shall be by ordinance.

The principal business of the County Planning Commission is the development and operation of a master planning process for the unincorporated parts of the county.

172

3.2.16 County Department of Public Works

The Department of Public Works (DPW) are the local service agencies that provide the actual sewering and treatment of wastewater. These organizations vary, depending upon where one is located. In some counties, the Drain Commission serves as the County DPW. In others, the Road Commission performs this service. The County Public Works Act of 1957 (Act 185) allows counties to establish a Board of Public Works to oversee the operations of a Department of Public Works. At the municipal level, townships, villages, cities, and special corporations and authorities, each have a Department of Public Works that manages water quality.

A Board of Public Works may consist of three, five, or seven members appointed by the Board of County Commissioners to serve staggered terms. If the county has a Drain Commissioner, he is an ex officio member for as long as he serves as Drain Commissioner.

So established, a Department of Public Works (administered by the Board of Public Works) may acquire, construct, or improve the following types of facilities within the county:

- Water supply systems,
- Sewage disposal systems,
- Refuse systems,
- Lake improvements, and
- Erosion control (resulting from actions of the Great Lakes).

Any County Department of Public Works has authority to function anywhere within its own county and in other counties. However, Departments of Public Works cannot function anywhere without the consent of the governing body of affected jurisdictions, as expressed either by resolution or contract. Once such resolution or contract exists, the Department of Public Works may function within that jurisdiction.

Similarly, a Department of Public Works is prohibited from furnishing its services to individual users of any jurisdiction without consent of that jurisdiction.[16]

3.2.17 Soil Conservation District

Soil Conservation Districts have authority which gives them indirect control of the use of land. They are established pursuant to a petition filed by 25 occupiers of land in the proposed district, which is acted upon by the State Soil Conservation Committee. Once formed, the Soil Conservation tion District may, subject to certain restrictions, comprehensively plan, study, research, and conduct demonstration projects; carry on preventive and control measures, including land use changes (provided owners of land consent); furnish financial aid in the carrying out of erosion control; and prevent and assist the carrying out of conservation and soil resource operations. It is to be noted that soil conservation district powers are cast principally in the permissive form. However, such units may prove of assistance in rural land use programs.[17]

3.2.18 Designated Act 347 Agency

As the name of the enabling Act suggests, the 347 Agency is responsible for protection of soil and water resources from erosion and sedimentation. The County Board of Commissioners, by resolution, must designate an enforcing agency to be responsible for administration and enforcement in the name of the county. The resolution may set forth a schedule of fees for conducting inspections, planning reviews, providing permits, and handling other pertinent matters. A copy of the resolution must be sent to the State Water Resources Commission.[18]

3.2.19 County Agricultural Stabilization and Conservation Committee

The County Agricultural Stabilization and Conservation Committees (COC) are the links between the individual farmer and the U.S. Department of Agriculture. The COC's provide local policy-setting and implementation functions for the Agricultural Stabilization and Conservation Service. They are not units of government in themselves, nor are they formally associated with the Soil Conservation Districts, although much of their activity is related to Soil Conservation District interests.

The major role of the COC with respect to water quality management is the local administration of the agricultural conservation program (ACP). The ACP and the county ASC Committees are important to water quality management mainly for their potential to implement agricultural management practices that would reduce soil erosion and sedimentation and nutrient losses.[19]

3.2.20 Local Governments

Cities, villages, and townships are all vested with the power to provide water services and related land improvements. Through their enabling legislation, cities, villages, and townships are authorized to adopt zoning ordinances and regulations which may regulate the location of various uses of land. Additionally, local units of government are responsible for constructing and maintaining, either individually or jointly, sewerage and waste disposal systems. They may also provide a variety of other public services (e.g. schools and roads).

All local units of government are governed by an elected legislative body. Many have planning commissions or zoning boards to oversee planning responsibilities.

The following describes the three major types of local general purpose government.

3.2.20.1 Cities

Fourth Class Cities are organized under Act 215 P.A. of 1895 as amended. The Act sets forth procedures for creation of municipal corporations and specifies their powers. The Home Rule Cities Act, Act 279, P.A. of 1909 as amended, provides a similar but broader vehicle for municipal incorporation. Instead of providing only specifically enumerated powers, as in the Fourth Class Cities Act, the Home Rule Cities Act grants broad powers to municipal corporations subject only to specified restrictions and consistency with the laws of the State. There do not appear to be significant differences between home rule and fourth class cities in terms of issues relevant to water quality management.

Article VII, Section 24, of the Michigan Constitution states that any city may acquire, own, and operate sewage disposal systems within its corporate limits. Article III, Section 5, permits cooperation between the cities and other subdivisions of the State and the U.S. and Canada. Section 28 of Article VII permits joint administration of projects between cities.[20]

Under their police powers, cities may regulate the locations of various land uses through zoning and subdivision regulation. More specifically, MSA 5.293, Section 1, gives municipalities the power to regulate and restrict the locations of trades and industries. MSA 5.2932, Section 2, gives cities the power to regulate and limit the height and bulk of buildings and to divide the city into districts. MSA 5.2933, Section 3, provides authority to regulate the density of development within the municipality. In addition, cities have the authority to establish a planning commission and adopt a municipal plan.

Cities are also given the power to levy taxes. They may derive revenue from State and Federal revenue sharing, grants-in-aid, and permit and licensing fees and fines.

3.2.20.2 Townships

Article IV, Section 24 of the Michigan Constitution gives townships the right to acquire, own, and operate sewage disposal systems. Article III, Section 5 of the Constitution gives townships the right to enter into agreements with other subdivisions of Michigan to perform their respective functions in water sewer management; and Article VII gives townships the right to join each other in agreements to perform lawful functions. Act 261, P.A. of 1927, empowers townships to prevent the management and construction of facilities for the treatment of sewage within their boundaries without their approval.[21]

Under their police powers, townships may regulate the locations of various land uses through zoning and subdivision regulations.

175

Township functions concerning water quality may be administered by a variety of local government agencies. These include:

- Building Inspectors
- Health Departments
- Planning Boards or Commissions
- Drain Commissions
- Public Works
- Zoning Departments
- Road Commissions

The decision by a township board to establish its own building inspection, planning and zoning, and public works departments is based on local need and cost to the township.

3.2.20.3 Villages

General Law Villages are authorized by Act 3, P.A. of 1895 as amended. Home Rule Villages are authorized by Act 278, P.A. of 1909.

State Statute MSA 5.1285, Section 1, et seg., provides for the regulatory and ordinance powers of villages, while MSA 5.1318 gives villages the power to regulate sewer and drainage systems. Villages have the authority to join other villages or subdivisions for the joint management of water treatment and management systems (Section 28 of Article VII, State Constitution). Section 24 of Article VII gives villages the power to own, acquire, and operate sewage disposal systems within their corporate limits.

Although many unincorporated villages exist in fact, they are not a legal entity and have no legal status. Therefore, unincorporated villages have no power to levy taxes for fire and policy protection, nor do they have jurisdiction concerning schools, water, sewers, and roads (MCL 5.1201, Section 1, Note 19).

Under their police powers, villages may regulate the locations of various land uses through zoning and subdivision regulation. In addition, villages may establish planning commissions.

MSA 5.1371 authorizes villages to levy taxes by the vote of the village council. The tax rate may not exceed 1 1/4 percent of the assessed value of real and personal property in the village. MSA 5.1309 gives villages the right to use special assessments and the general tax fund to construct sewers, drains, and watercourses. These special assessments can be levied only on the land benefiting from the construction project.

The village council may issue bonds limited to six percent interest, and not exceeding the amount of the assessment. These bonds are limited to 10 percent of assessed value of property in the village. Villages also receive State and Federal revenue-sharing funds and certain categories of restricted State aid and collect a variety of permit license and user fees.

3.3 LEGISLATIVE FRAMEWORK

This section will outline the legislative framework of laws pertaining to water quality in the State of Michigan and will discuss how these laws are implemented by the various responsible agencies. This framework is presented in summary form in Table II, "Summary of Legislative Framework". An evaluation of the implementation process is presented in Table III, entitled "Summary of Analysis". Each table is accompanied by a page of notes identifying different symbols that are used in the table and any specific clarifying comments. The following subsections present in detail the legislative framework and evaluation, as summarized in the two tables.

3.3.1 Urban Areas

3.3.1.1 Construction Site Runoff

Magnitude of the Problem

New construction sites in urban areas can exert a nonpoint source loading of sediments up to 500 times greater per unit area than is evident in agricultural operations. Construction is an extensive land use disturbing activity and places urban lands under significant pressures and unstable conditions, resulting in a high loss of topsoil.[22] The problem is directly related to the growth of a specific area and the resulting demands for additional housing and commercial and industrial construction. The problem is greater in some urbanized areas than others, and is a moderate one in Michigan.[23]

Current Activities

Two types of nonstructural control measures can be applied to construction, zoning, and soil erosion controls.

Local Zoning Ordinances, as prescribed in 1943 P.A. 183, 1921 P.A. 207 and 1943 P.A. 184, enable townships, cities and counties to control the type of construction activities in environmentally sensitive areas. Many local governments encourage increased growth instead of limited growth. Consequently, construction activities are apt to continue without environmentally-oriented zoning restrictions.[24]

Soil Erosion Controls. Soil erosion control measures appear to be the most applicable mechanism to regulate pollution from construction activities. The Soil Erosion and Sedimentation Control Act of 1972, 1972 P.A. 347, provides sufficient controls to reduce construction-generated pollutants.

Through the Act, the State of Michigan has authority to control all major earth-moving activities, except those dealing with logging and mining. A major earth-moving activity is defined as a project that disturbs one or

MICHIGAN

Summary of Legislation

TABLE II

CHAPTER	LAND USE CATEGORY										IMPLEMENTING RESPONSIBILITY				TYPE OF CONTROL						COMMENTS/IMPLEMENTING AGENCY
	Urban	Agriculture	Liquid/Solid Waste	Transportation	Shoreline Landfill	Extractive Operations	Recreation	Lakes & Riverbanks	Forest	Regulations	State	County	Municipality	Special District	Direct (PC)	Planning (P)	Indirect (OS)	Non-Statutory (NS)	Management (MP)	Fiscal (F)	
Executive Order 1974-4 and Guidelines	X	X	X	X	X	X	X	X	X	YES	X	X	X	X	X	X					Michigan Environmental Review Board
Inland Lake Improvement Act 1966 as amended 1972					X					N/A	X				X						Department of Natural Resources
Resource Recovery Act, Reg. 299-5003			X							YES	X					X	X				Department of Natural Resources State Resource Recovery Commission
Solid Waste Disposal Act, Public Act 87			X							YES	X	X	X			X	X				State Department of Health Local Health Agencies
Shoreland Protection and Management Act	X	X			X			X		N/A	X	X	X			X	X				Water Resources Commission
Act 320, 1927			X								X	X	X		X						
Natural River Act of 1970					X			X	X	N/A	X				X	X					Natural Resources Commission
Mineral Well Act, 1969 P.A. 315						X				N/A	X				X						Department of Natural Resources
Mine Reclamation Act, 1970, P.A. 92						X				N/A					X						Department of Natural Resources
Farmland and Open Space Preservation Act		X								N/A	X	X	X				X		X		State Land Use Agency, Local Gov'ts.
1943 P.A. 184, 185 as amended	X	X	X	X	X	X	X	X	X	N/A			X				X				Township Board, County Board
Soil Conservation Disrict Law, 1973		X								N/A				X		X			X		Soil Conservation Districts
1943 P.A. 183	X	X	X	X	X	X	X	X	X	N/A		X					X				County Boards
1921 P.A. 207	X	X	X	X	X	X	X	X	X	N/A			X				X				Cities and Villages
County Planning Act of 1945	X	X	X				X	X	X	N/A		X				X					County Planning Commissions
Regional Planning Act 281	X	X								N/A				X		X					Regional Planning Commission
Municipal Planning Act of 1931	X	X			X		X			N/A			X			X					Municipalities
Water Resources Commission Act																					Department of Natural Resources
Water Quality Standards, Administrative Code, Part 4										YES	X				X	X					Department of Natural Resources
Soil Erosion & Sedimentation Control Act	X			X			X			YES	X	X	X	X	X	X					SCD's, Counties, Villages, Towns, Municipalities, Dept.of Agriculture, WRC, DNR
Drainage Code 1956 P.A. 40		X								YES		X		X	X	X					Water Management Districts County Drain Commissions
Township Planning Act of 1959	X	X	X		X		X			N/A			X			X					Township Planning Commission

178

NOTES -- TABLE II

1. Land Use Categories -- See Chapter 2, for definitions and identification of the land use activities in each category. An X indicates that the land use category is addressed by the Act. It does not indicate the adequacy of authority or degree of implementation. See page reference for discussion.

2. Regulations Adopted -- Have regulations been adopted to implement the legislation? Symbols refer to:

   Yes -- Regulations have been adopted

   No -- Regulations have not been adopted

   NA -- Information not available or in case of Non-Statutory Control, not applicable.

3. Implementing Responsibility -- The key agencies and/or levels of government that have responsibilities in implementing the legislation. Specific agencies, municipalities and/or special districts are identified in the comments section.

4. Type of Control -- See Chapter 2, Section 3, for definitions of each type of control.

5. An X indicates that the category is addressed by the act identified, it does not identify the adequacy or degree of implementation.

MICHIGAN Summary of Analysis TABLE III

LAND USE ACTIVITY	Magnitude of the Problem[1]	Current Activity[2]	Staffing[3]	Financing[4]	Likely Future Activity[5]	COMMENTS
Urban						
Site Runoff	M	EP	-	-	EP	Example of a Model Control Program
Stormwater Runoff	S	NO	NI	NI	L,R	One of the most serious problems
Agriculture						
Pesticides	L	TP	NI	NI	NC	
Fertilizers.	L	NO	NI	NI	NO	
Feedlot Operations	L	NO	NI	NI	NI	
Erosion from Farm Practices	S	T,R	NI	NI	L,R	One of the most serious problems
Drainage	L	EP	-	-	NC	
Liquid, Solid, Deepwell Disposal						
Solid Waste	L	EP	-	-	NC	
Liquid Sewage Sludge	L	EP	O	O	NC	Industrial wastes only
Private Sewage Disposal	M	EP	-	-	NC	
Transportation Corridors						
Highway and Road Runoff	L	EP	NI	NI	NC	Sedimentation control only
Railroad Runoff	L	EP	NI	NI	NC	" " "
Airport Runoff	L	EP	NI	NI	NC	" " "
Utility Rights-of-Way Runoff	L	EP	NI	NI	NC	" " "
Shoreland Landfilling						
Land or Construction Excavation	L	EP	NI	NI	IP	
Dredging	L	EP	NI	NI	IP	
Extractive Operations						
Pits and Quarries	L	NA	NA	NA	NA	
Mining	L	EP	-	-	NI	
Brines from Oil and Gas	L	NI	NI	NI	NI	
Recreation						
Runoff from Specific Activities	L	NI	NI	NI	NI	
Pesticide Use	L	TP	NI	NI	NC	Same as agricultural pesticides
Private Sewage Disposal	M	EP	-	-	NC	
Lakeshore and Riverbank Erosion						
Erosion	M	R	NI	NI	R	
Forest						
Timber Production	L	EP	NI	NI	NC	
Woodland Grazing	L	NA	NA	NA	NA	
Wildlife Management	L	NI	NI	NI	NI	
Recreation	L	NI	NI	NI	NI	

NOTES FOR TABLE III

1. Magnitude of the Problem -- The degree that the land use activity is reported to be a problem and/or perceived to be a problem by local or State officials. Symbols refer to:

   S -- serious

   M -- moderate

   L -- low

   UK -- yet to be determined

   NI -- information not available.

2. Current Activity -- The land use activities where current activities are focused primarily at the State level. Activities of major emphasis are noted with asterisks (I). The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of incentive programs

   EP -- enforcement of control programs

   TR -- technical research is needed to determine the type of controls needed, if any

   NO -- no action

   NA -- not applicable

   NI -- information not available.

3. Staffing - The adequacy of staff assigned to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too many staff resources applied

   0 -- an adequate amount of staff resources applied

   - -- an inadequate amount of staff resources applied

   NA -- not applicable

   NI -- information not available

4. Financing -- The adequacy of the financing appropriated to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too much financial assistance

   0 -- adequate financial assistance

   - -- inadequate financial assistance

   NA -- not applicable

   NI -- information not available.

5. Likely Future Activity -- The land use activities where there is likely to be future activity primarily at the State level. The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of new or improved incentive programs

   EP -- enforcement of new or improvement of control programs

   NO -- no action

   NA -- not applicable

   NI -- information not available.

   NC -- no change from current activity

more acres of land, or is within 500 feet of a waterway. Acting through the Michigan Water Resources Commission, the Michigan Department of Natural Resources is responsible for the Act's administration.

A three-person staff in the Department of Natural Resources oversees the daily operations of local agencies responsible for the act's enforcement. P.A. 347 authorizes all counties to administer and enforce the act's program throughout its jurisdiction. The Act also allows cities, villages and charter townships to act in this capacity if they choose to do so. In these cases, the county is then responsible for its jurisdiction, less those areas covered by other local government enforcement agencies. In either case, all local enforcement agencies are required to apply to the State to receive these enforcement powers and must have their local soil erosion programs approved. In addition to county and local enforcement agencies, the Act allows State, local and county agencies to become authorized public agencies. After being granted such approval by the State, an authorized public agency can approve soil erosion and sedimentation control practices. This allows an authorized public agency to police its own work and to develop a soil erosion control plan independent of any enforcement agency.

Under the Act, a landowner or developer who contracts for, allows, or engages in a major earth change must obtain a permit from the appropriate enforcement agency. This includes major earth changes connected with the following land use activities:

- Transportation facilities
- Subdivision or lot development
- Industrial or commercial development
- Service facilities
- Recreational facilities
- Utilities
- Oil, gas and mineral wells not regulated by the supervision of wells
- Water impoundments and construction improvements

Applications for a State permit are submitted to the appropriate local enforcement agency prior to the earth change. The application must be accompanied by an approved soil erosion and sedimentation control plan.

The local enforcement agency can either approve or disapprove the application. If disapproved, required changes to the erosion control plan would be outlined to gain approval. Local building permits are not issued until after approval of the application. The local enforcement agency is then responsible for the on-site monitoring of construction activities to ensure that the practices described in the soil erosion control plan are being utilized.[25]

As of this writing, not all local agencies have been certified by the State. Of the 83 counties in the State of Michigan, 78 have approved programs. The remaining five are under review, with expected approval by the

183

end of 1977. Of the 107 local governments that have applied for approval as Local Public Agencies (LPA's), 57 have been approved; and 50 are being reviewed by the DNR, with expected approval by mid-1978. There currently are 128 approved programs of Approved Public Agencies (APA's), with 78 applications under review.[26]

This arrangement has resulted in a large administrative span of control for the DNR. Instead of having 83 county enforcement agencies to oversee, the DNR must deal with 396 local and county agencies. As noted earlier, this must be accomplished by a three-man staff.

The funding of local enforcement is accomplished through a fee structure for private applicants. The fees vary from $5 to $10,000, based on the magnitude of the earth change.[27]

Evaluation

Of the two types of control measures, zoning is not environmentally oriented; thus it does not control the water quality impacts of construction activities directly or indirectly. While the potential exists, the growth-oriented emphasis of most local governments precludes any widespread use of environmentally-oriented zoning. It appears, therefore, that local zoning is not widely effective in controlling pollution from construction activities.[28]

The Soil Erosion and Sedimentation Control Act has created a partnership of State and local agencies to control construction site activities. This partnership is another dimension of the overall water quality program administered by the DNR. It appears that there are several potential problems in implementing the Soil Erosion and Sedimentation Control Act:

- Lack of effective State control over both enforcing agencies and authorized public agencies.
- Lack of uniform enforcement practices throughout the State.
- Insufficient surveillance of the construction activities of authorized public agencies.

These problems appear to lead to ineffective control of water pollution caused by construction activities.

Despite the Act's drawbacks of insufficient on-site monitoring of construction activities, large span of control for the State, inadequate staffing for the DNR, and non-uniform enforcement practices, P.A. 347 does represent a workable framework from which to control pollution from construction activities.[29]

184

The funding of local enforcement activities remains an issue, with local agencies relying on approval of private actions for fees to operate the total program unless it is supplemented by local appropriations. This situation has led to pressure to approve private actions to generate fees and results in non-uniform enforcement.[30]

3.3.1.2 Urban Stormwater Runoff

Magnitude of the Problem

Twenty-five years ago, urban runoff was recognized as a contributor to water quality degradation, but only insofar as it created a quantitative problem that led to combined sewer overflows. More recently, however, stormwater itself has been recognized as a potentially significant source of pollutants.

A variety of studies have demonstrated that the BOD load of urban runoff during a storm can be significantly larger than that of the sanitary sewage the urban area would generate during the same length of time. For example, BOD loads from stormwater have been found to be as much as 500 to 800 percent greater than the loads discharged from a secondary treatment plant during the same time span. Furthermore, recent studies have shown that the annual loadings of BOD from urban runoff can be approximately the same as those from a secondary plant serving the corresponding area.[31]

In Michigan, the magnitude of the stormwater runoff problem is unknown; but State officials have identified it as a major nonpoint source of pollution.

Current Activities

Stormwater runoff can be indirectly controlled through the local zoning powers described in Section 3.3.1.1. Again, such controls are not widely utilized, due to the growth orientation of most local governments.[32]

An additional law which regulates urban development is the Subdivision Control Act, 1967 P.A. 288.

1967 P.A. 288: Subdivision Control Act. The Subdivision Control Act requires that a division of land resulting in a subdivision be approved by several governmental agencies defined in the Act. A subdivision is defined as the division of land resulting in five or more parcels, each with an area of ten acres or less, within a period of ten years. The Act requires that a preliminary map or plot of the proposed subdivision of land be reviewed and/or approved as follows:[33]

- Approved by the local governing body
- Approved by the county road commission, if the proposed subdivision includes or abuts roads under the commission's jurisdiction

- Approved by the county drain commissioner

- Approved by the local health department, if public water and public sewers are not available

- Approved by the Michigan Department of Highways, if the proposed subdivision includes or abuts a State trunkline

- Approved by the Michigan Department of Natural Resources, if the proposed subdivision abuts a lake or stream

- Approved by the Michigan Water Resources Commission, if the proposed subdivision lies within the floodplain of a river, stream, creek or lake

- Reviewed by the county plat board and public utilities serving the area

In addition, the State is relying on the results of the Section 208 water quality management studies to develop a comprehensive statewide program to control urban stormwater runoff. These studies should be completed by November, 1978.

Evaluation

Local zoning authority is not used as a control measure for urban stormwater runoff in Michigan. Zoning is not environmentally oriented; thus it does not control the water quality impacts of stormwater runoff directly or indirectly. The potential for environmentally oriented zoning to become an indirect control exists, but the growth oriented emphasis of most local governments precludes any widespread use. It appears, therefore, that local zoning is not widely effective in controlling pollution caused by urban stormwater runoff.

The use of the Subdivision Control Act provides a much more comprehensive review, although the review procedure is quite cumbersome and time-consuming for the developer.

Performance under this Act varies from jurisdiction to jurisdiction. A survey showed that approximately nine percent of the sampled plats were denied by local governing bodies. This could be due to either well-conceived subdivision plats or ineffective administration of the Act. In either case, it appears that the effectiveness of this control measure should be further investigated. The Act itself does provide a sufficient level of reviews and approvals to regulate development.[34]

3.3.2 Agriculture

3.3.2.1 Pesticides

Magnitude of the Problem

A study of water quality issues in Michigan presented the following discussion on the use of pesticides in the State.

While far from conclusive, the available literature indicates that the amount of pesticide residues lost from agricultural watersheds through all types of runoff is in extremely low-level concentrations, but the impact of pesticides on aquatic life is disproportionately larger due to biomagnification. Furthermore, the ramifications of possible accumulations of these chemicals in sediments are largely unknown at this time. While natural processes reduce or remove pesticidal residues from soils and the aquatic environment, the means by which this happens are not clearly understood; and the degradation products are not fully identified.

The future impact of pesticides is unclear and will certainly depend upon a number of factors. To the extent that persistent chemicals may already reside in the soil's upper layer, they will likely remain available for transport for some time. Of special concern are the organochlorine insecticides which have accumulated as a result of repeated or high intensity applications. While residue levels are well documented in some watersheds, there has been no comprehensive effort to monitor pesticide residues on a continuing basis. Therefore, it is impossible to quantify the future seriousness of this problem.

Future application rates of pesticides are another parameter of concern. Projections generally call for increased usage, particularly for herbicides. While this implies that more chemicals could reach the State's waterways, other considerations cloud the picture. First, more use will be made of less persistent chemicals, although this may be counterbalanced by the fact that more frequent applications will be required because of their greater degradability. Furthermore, metabolite accumulations may be no less a concern. Second, chemicals with greater specificity are expected to be developed, making possible more discrete use. Finally, the Federal Insecticide, Fungicide, and Rodenticide Act, as amended in 1972, will require that "restricted" use chemicals be utilized only by applicators whose competence has been certified by the Michigan Department of Agriculture. Thus, one would expect that even greater care than may already be exercised will be taken with respect to the future application of pesticides.[35]

In the final analysis, future levels of pesticides in agricultural runoff may depend more upon erosion than any other factor, since these chemicals generally are absorbed rather strongly into soil particles. In this regard, the previous discussion of sedimentation suggests that the quantities of pesticides appearing in runoff will not decline appreciably during the next 10 or 15 years, especially since persistent compounds will remain available for transport even though they are no longer utilized.[36] The magnitude of the associated impacts from the runoff is uncertain at this time.[37]

In 1972, nearly 16,500 pounds of chemical pesticides were applied to crops. This includes herbicides, insecticides and fungicides. In general, the use of pesticides is expected to increase over the next ten years as new types are developed and additional specific uses are found. It is anticipated that a leveling out of the quantity of insecticides used will occur in the next ten years; while fungicide use will increase by 10 to 15 percent, and herbicide use will increase by 10 to 20 percent.[38]

Current Activities

Michigan has two laws which regulate the role and application of pesticides. The Insecticide, Fungicide, and Rodenticide Act is a registration and labelling act requiring all pesticides be registered with the Michigan Department of Agriculture. This use could be restricted if the results of a public hearing deem it necessary to protect the environment. There is also legislation which requires licenses for dealers selling restricted pesticides. Applicants for a license must demonstrate their knowledge of the laws and their responsibilities in handling such products. Applicants must also demonstrate their experience in applying such products and the potential adverse effects of ineffective applications. This legislation does not apply to farmers who apply pesticides to their own land or to others for nonprofit motives.[39]

Evaluation

The Michigan Department of Agriculture in carrying out its responsibilities places emphasis on human health rather than water quality, i.e. pesticides getting into foods by remaining in the crops, rather than running off through soil loss into lakes and streams. While there obviously are relationships between the two, the Department of Natural Resources feels that greater emphasis should be placed on water quality, and would do so if given control of the program.[40] DNR did not indicate that it is actively seeking such control. This is in part due to DNR's evaluation that the control of sedimentation will greatly control the water quality impacts of pesticides since sediment is the transport vechicle. Thus, officials of the DNR feel that pesticides themselves are not a water quality problem, and that the current State laws adequated control them.[41]

3.3.2.2 Fertilizers

Magnitude of the Problem

While potash, phosphorus, and nitrogen are all naturally present in the soil and applied through the use of commercial fertilizers, attention has been focused almost exclusively on the latter two. Surface runoff and seepage through field tile drains are the most likely ways for these nutrients to reach the State's rivers and streams.

A recent literature survey leaves no doubt that nitrogen and phosphorus can be transported to rivers and streams via agricultural runoff. However, it is equally evident that there is a wide range in the data amassed thus far, reflecting the fact that numerous parameters affect the availability and mobility of these nutrients. Furthermore, it is not sufficient to simply know the total amount of a nutrient which is present in agricultural runoff, since this does not provide any indication of the amount which is in a form available for aquatic plant uptake. In short, the potential for water quality degradation from agricultural nutrients is clear, but the actual circumstances being experienced in Michigan are largely unknown at this time.[42]

It is generally thought that fertilization and soil cultivation practices are two of the most important factors affecting the levels of phosphorus (P) and nitrogen (N) in runoff. The obvious impact of fertilization is that it adds nutrients to those that are naturally present in the soil. The main concern with respect to cultivation practices is that soil erosion is a major transport mechanism for these constituents, especially phosphorus. While the amount of nutrients added by fertilization on an annual basis is small relative to nature nutrient levels, the amounts accumulated over years of continuous use can be significant.[43]

Since major changes in the amount of land under cultivation are not anticipated in the next ten or 15 years, the potential for nutrients in agricultural runoff will vary largely as a function of changes in fertilizer application and soil manipulation practices. With respect to fertilization, it appears that total usage has declined and may be leveling off. In addition, the higher price of fertilizers, which is apt to hold in the future, implies that care will be taken to observe recommended application rates and to apply fertilizers at times which will maximize crop uptake. Thus, the potential contribution of fertilizers to nutrient levels would not be expected to increase in the next several years, and may in fact decline somewhat. On the other hand, the amount of fertilizers used will still be very large, and any decreases that do take place will be relatively small compared to the total amount of nutrients applied.[44]

Fertilizer usage in Michigan in 1972 totalled approximately 303,000 pounds of nitrogen and 293,000 pounds of phosphorus.[45]

Current Activities

There are no Michigan laws designed to control fertilizer use which could result in water pollution. Act 198 of 1975 provides the Department of Agriculture with the authority to regulate the manufacture, distribution, labeling, sale and advertising of fertilizers. It is not, however, focused on poor application practices on farmland.[46] In addition, indirect control is achieved through the application rate advice given farmers by the State Agricultural Extension Service.[47]

189

Evaluation

The Michigan Department of Natural Resources does not feel that fertilizers are a water quality problem in the State. The increasing price of fertilizer acts as an economic deterrent for the overuse of fertilizer by farmers who are motivated to keep their cost as low as possible. The officials interviewed feel that the combination of application rate advice by the Extension Service and the increasing price of fertilizers provide adequate indirect control.[48] As a result of this analysis, it is the Contractor's opinion that the State will take no action to gain further control of fertilizers.

3.3.2.3 Feedlot Operations

Magnitude of the Problem and Current Activity

No feedlots in Michigan currently receive a discharge control permit. Those that meet the size requirements of the Federal Water Pollution Control Act use their discharge for irrigation. Smaller feedlots may be required to obtain a permit if it is found that the feedlot has a history of water quality problems.

The DNR has not identified feedlot operations as a water quality problem in the State. As a result, the State does not anticipate any activities directed at establishing any regulations for feedlot operations. This could change if the 208 plans indicate a need for regulation.[49]

Evaluation

The State should review the magnitude of water quality problems from feedlot operations and develop the necessary controls and technical and financial assistance to solve waste problems.

3.3.2.4 Erosion

Magnitude of the Problem

Average sheet erosion rates for rural land in Michigan's most intensely farmed counties are generally greater than 3.5 tons per acre per year and range as high as 5.8 tons per acre per year. If one assumes an average sheet erosion rate of about 4.0 tons per acre per year for cropland, total soil losses would exceed 25 million tons per year for the 6.6 million acres which the Michigan Department of Agriculture estimates under cultivation. On the other hand, the U.S. Soil Conservation Service has estimated that Michigan has 11 million acres of cropland and that 40 million tons of soil are eroded annually. In either event, the potential for sedimentation is great, although the large discrepancy in these estimates serves to emphasize the current lack of knowledge about nonpoint sources of pollution.[50]

190

Whether present erosion rates will increase or decrease in the future is a function of several factors. Among the more important are the crops grown, tillage practices, and the use of mechanical control measures (such as coutour farming, grass waterways, and buffer strips). In terms of crops grown, changes in the amount of row crops probably hold the greatest potential for affecting erosion rates. While a small decline in the acreage devoted to such crops has been projected for the period from 1970 to 1980, it is anticipated that production will recover following that. Thus, erosion rates are not apt to change much. With respect to tillage practices, there was an eightfold nationwide increase in the acreage worked with minimum tillage systems between 1963 and 1974. There is likewise reported to be a growing acceptance of such systems among Michigan farmers. To what extent this and other soil conservation practices will be adopted in the future is a function of decisions made by individual farmers and the success of the various control, incentive and technical assistance programs which influence the decisions of farmers.

Current Activities

Public Act 297 of 1937 establishes Soil Conservation Districts and gives them the authority to:[52]

- Make soil erosion control equipment and material available to landowners
- Develop comprehensive conservation plans
- Administer or take over soil conservation projects sponsored by any federal or State agencies
- Make and execute contracts necessary to exercise the Act
- Enter into conservation agreements with landowners.

Participation in the above programs is voluntary. In addition to the constraint of voluntary participation, each district is limited by funding. Each district receives limited funds from the State and federal government and sometimes from the boards of county commissioners to cover administrative costs. These funds typically amount to several thousand dollars per year. Additional funds are generated through fund raising projects such as the sale of trees and shrubs.

These limited funds have put the districts into a position of relying upon the Cooperative Extension Program to disseminate new concepts to farmers. Additionally, the districts rely upon the Agriculture Stabilization and Conservation Service for conservation-related funding. The districts do not have sufficient funding to support conservation projects. These coordinative roles have put the districts into a position of overseeing and assisting farmers in the area of conservation. Consequently, most farmers view the districts as allies who are there to assist and not there to interfere.[53]

191

Through 1972 P.A. 347, the State of Michigan has the authority to control all major earth-moving activities except those dealing with logging and mining. The implementation of agricultural practices, however, shall not take effect until January 1, 1979. Agricultural practices in the context of the Act include all farming operations except the plowing and tilling of land for the purpose of crop production or the harvesting of crops. Consequently, no agricultural activities are currently regulated by the Act. The Act does, however, describe how agricultural practices will be regulated after January 1, 1979:

> "A person engaged in agricultural practices may enter into agreement with the appropriate soil conservation district to pursue such agricultural practices in accordance with rules set by the Water Resources Commission. In such cases, the district will notify the county or local enforcement agency of the agreement. With such an agreement, the person will not be subject to any State plans, land use plans, or permits pursuant to the Act. This does not, however, free the person from being prosecuted for violating the conditions of the Act or rules of the Water Resources Commission."[54]

Evaluation

Given that future erosion rates are projected to remain constant or decline only slowly, it appears that the impacts of sedimentation will not decrease significantly, if at all, unless current soil conservation programs are greatly accelerated. Even if this projection is wrong and marked decreases in erosion rates are effected, it must be remembered that the purpose of soil conservation practices as presently applied is to maintain the soil's long-term productivity from an agricultural point of view. Thus, while rivers and streams would undoubtedly benefit from reduced erosion rates, it does not necessarily follow that practices which optimize a soil's productivity will also be found to have reduced sedimentation to levels which are acceptable from a water quality point of view.[55]

County ASC Committees and Soil Conservation Districts (with the assistance of the SCS and ASCS) appear to have the technical knowledge for controlling nonpoint pollutants from agricultural activities. They do not, however, possess the necessary authority to carry out the required control measures.[56]

The major weakness is the exemption of the agricultural operations of plowing and tilling from 1972 P.A. 347. To make this Act completely effective, these operations should be included; and the appropriate technical and financial assistance should be given to farmers to implement the program.

3.3.2.5 Drainage

Magnitude of the Problem

192

Agricultural drainage has been undertaken in order to create a cultivatable land base. Historically, this was often done at the expense of the wetlands which once covered significant portions of the southern Lower Peninsula.

Drainage on lands already under production is still an important activity. Especially noteworthy is the concern that the intended function of many legally designated county and intercounty drains is being impaired by the lack of adequate maintenance.

In addition to maintenance of existing drainage systems, there are also hundreds of thousands of acres of farmland in Michigan which could, from the point of view of soil productivity, benefit from new or additional drainage. Estimates of the amount of land which experiences agricultural drainage and associated flooding problems range from 3.1 to over 4.7 million acres. In either case, 80 to 90 percent of the land involved is located in the southern Lower Peninsula.[57]

Current Activities

Local drains are the responsibility of elected County Drain Commissioners. Intercounty drains are operated by a Board of Commissioners made up of the County Drain Commissioners of the affected counties and chaired by the Deputy Commissioner for Intercounty Drains of the Michigan Department of Agriculture. The current activity is maintenance of legal drains when a petition of the adjacent landowners is received. Most counties do not have or have a very small drain inspection program which determines the condition of the drains and the need for maintenance.[58]

The programs of the Drainage Commissioners are directed toward maintenance of drains for agricultural purposes--not toward maintenance of water quality. Most of the Offices of Drain Commissioners are one-man office; thus, there is a lack of staff to carry out a comprehensive inspection program. Current activities respond to complaints and maintenance petitions.[59]

There is a conflict between the water quality goals of the DNR and the drainage maintenance goals of the Drain Commissions. The DNR has responsibility for all waters in the State, including water in legal drains. The Drain Commissions are responsible for maintaining all legal drains. Such maintenance can disturb the water in the drain resulting in the potential for water quality problems.[60] The Drain Commissions must obtain DNR approval to disturb waters while carrying out their maintenance program; which is not always issued by the DNR.

Evaluation

As noted above, Drainage Commissioners do not directly consider water quality problems, but are concerned with the drainage of agricultural land. There is a potential for greatly expanded maintenance activity, but the lack of staff and financing is apt to mean that only a fraction of the potential projects will come to fruition. The conflict between DNR's responsibilities and water quality goals and the Department of Agriculture and the Drain Commissioners also must be resolved before the potential for expanded maintenance activities is realized.

3.3.3 Liquid, Solid and Deepwell Disposal

3.3.3.1 Solid Waste

Magnitude of the Problem

Solid waste in Michigan most often ends up in landfills or open dumps. There are approximately 950 solid waste sites in Michigan, about 15 percent of which are sanitary landfills.[61]

Future utilization of land disposal will be a function of the amount of wastes to be disposed of and the alternative means of handling them. Since per capita rates of generation are expected to remain constant or decrease slightly, the total amount of wastes will increase as the population does. The portion which will go to landfills is apt to be at least as large as it now is, since recycling or incineration will probably not become significant factors in the near future.[62] Leachate is a problem from most of the sites.[63]

Current Activities

Solid waste disposal is controlled through the Solid Waste Management Act, 1965 P.A. 87. The Act was established to protect public health through the planning of solid waste management systems, the licensing and regulating of garbage and refuse disposal facilities and refuse transporting units. The Act prohibits the disposal of any refuse to any site not licensed in accordance with the Act.[64]

P.A. 87 is administered by the Resources Recovery Division of Michigan's Department of Natural Resources. Licensing of disposal sites is performed annually. Applications for a license are made through county health departments. After receipt of an application, the State must inspect proposed site, determine if the proposed disposal operation complies with the rules and regulations of the Act, recommend any necessary changes and a schedule of implementation for correcting deficiencies of a proposed disposal operation, and obtain a surety bond of at least $2,500 to ensure the maintenance of the finished landfill for a period of two years after the landfill is completed.[65]

Approval of a license depends on the fulfilling of minimum guidelines dealing with surface drainage and topography, distance from refuse to surface water, type of subsurface material, cover material, and relation of refuse to groundwater levels.[66]

Landfill sites which do not meet these guidelines could be approved if suitable engineering improvements are provided. Such license approvals would be made with the provision that the required improvements are made within a determined time.[67]

Once a license for landfilling or transport is issued, it must be renewed annually. The Michigan DNR and local health departments have responsibility for inspection of site and transport operations. Current manpower at both levels of government are inadequate to implement and enforce an inspection program.[68]

Additional authority is provided the DNR in the Resource Recovery Act, (Act 366 of 1974). This Act provides the DNR with authority to control, encourage or promote the waste management systems such as collection, separation, reclamation, recycling metals, glass, paper and other materials of value from waste. Municipalities are given the authority to acquire, purchase, construct, improve, maintain or operate waste management systems as long as they are not in conflict with existing systems.

Evaluation

Michigan has adequate authority to control solid waste disposal; but, as noted above, implementation and enforcement are inadequate. Specifically, these operating deficiencies are:[69]

- Lack of ongoing surveillance of active landfills to ensure that minimum landfill guidelines are maintained
- Lack of monitoring activities for inactive landfills, including gas monitoring of vacated sites
- Lack of licensing and inspection programs for private individuals transporting their own refuse in their own vehicles

The residual waste analyses which are part of the 208 water quality management plans currently under preparation should develop solutions to these implementation and enforcement deficiencies. (See detailed discussion of 208 plans in report on Federal activities).

3.3.3.2 Liquid Sewage Sludge

Magnitude of the Problem

Most municipalities in Michigan provide some type of sewer service and treatment. Each of these types of systems generates liquid sludge which is diposed of in different ways--some adequate and others inadequate. The total amount of liquid sludge that requires disposal is unknown; however, it can be assumed that the volume will increase as more complete

195

treatment of sewage is accomplished.

Another aspect of dealing with liquid sewage sludge is the disposal of liquid industrial wastes. There are currently no estimates of the amount of liquid industrial waste in the State.

Current Activity

There are no controls for the disposal of sewage sludge. The Liquid Industrial Waste Haulers Act, 1969 P.A. 136 controls the transportation of industrial liquid waste. This Act requires persons engaged in removing liquid industrial wastes from the premises of others to be licensed and bonded. The program is administered by the Oil and Hazardous Materials Control Section of the Michigan Department of Natural Resources. The eight-person staff in this section is responsible for the following functions:[70]

- Inspecting and licensing all liquid and industrial waste hauler applicants
- Reviewing trip records of each waste hauler
- Visiting waste haulers twice per year to ensure continual compliance with the Act
- Identifying violations of this Act

A key provision of this Act is the reporting required of each licensed waste hauler. The Act requires that the licensee keep records of all trips where the pickup, hauling or disposal of liquid wastes is involved. The records maintain the following information:

- Date of trip
- Source of waste
- Quantity and type of waste
- Point and method of disposal
- Total mileage of each trip

Although they are not required to send these records to the State unless requested to do so, the majority of haulers routinely forward these reports every month. Making such reporting mandatory would improve the effectiveness of the system.

Records are also maintained by each source of industrial waste. The law requires that all sources forward these reports to the State each month. Both sets of records are critical to ensuring that industrial wastes are traced from their source to disposal.[71]

196

The Solid Waste Management Act, P.A. 87 also prohibits the disposal of hazardous materials, including liquids and sewage, in sanitary landfills.[72]

Evaluation

In the Contractor's opinion, a deficiency exists in that there is a lack of control over the disposal of sewer system liquid sludge wastes. The control of the transport and disposal of industrial liquid wastes is adequate, but industrial waste disposal sites should be required to maintain activity records for wastes received.[73] The State management arrangement for hazardous waste management will change when provisions of the new federal legislation (Resource Conservation and Recovery Act and Toxic Substances Central Act) are fully implemented.

3.3.3.3 Private Sewage Systems

Magnitude of the Problem

Septic tanks and tile fields are an important means of waste disposal. While extension of sewer service to non-farm, rural households and new municipal treatment plants in some rural communities may reduce the number of these systems, they most assuredly will continue to serve a large portion of Michigan's population. In addition, they undoubtedly handle a significant, although unknown, percentage of the seasonal population in many locales.

Given the land use patterns and seasonality of population in the northern Lower Peninsula, Upper Peninsula, and shoreline counties, it is likely that the most significant use of septic systems will take place in these areas. Especially important is the fact that residences located in a linear fashion along waterbodies will usually rely upon such systems. Furthermore, since waterfront development often takes place on small lots, high densities of septic tanks can result. Finally, the conversion of seasonal residences to year-round homes suggests that many septic systems will be receiving greater waste loads than they have in the past.[74]

The central question is whether county public health regulations with respect to the installation of on-site systems are adequate to protect against water quality problems, especially from nutrients. Given the expense of central sewer systems in areas with high seasonal populations and linear growth patterns, it is possible that the question of using on-site systems will be a significant issue in the future, since the growth of some areas may well hinge upon the degree of development which will be permitted by the regulations governing on-site systems.[75]

Statistics on the current number of septic systems and the potential growth areas for septic systems are unavailable.

Current Activities

Three acts directly control the location, installation and/or operation of septic systems. These are:

197

1939 P.A. 273: Regulation Pertaining to the Construction and Maintenance of Private Sewage Disposals. This Act requires local health departments to regulate the construction and maintenance of septic tanks. Although the Michigan Department of Public Health has developed a model sanitary code for administering this Act, local health departments are free to develop their own codes. Most local codes establish minimum standards for:

- Soil and percolation tests
- Size of absorption fields
- Size of septic tank
- Unsewered population density
- Depth to water table
- Depth of bedrock
- Degree of slope
- Distance to neighboring waterways

The strictness of these standards, however, varies from county to county.[76]

Servicing and Cleaning Act: 1951 P.A. 243. P.A. 243 was established to prevent the spread of infectious and contagious disease which could be transmitted through the cleaning and servicing of septic tanks, seepage pits or cesspools. The Act requires persons and vehicles engaged in these activities to be licensed and bonded. License applications are handled by the Oil and Hazardous Materials Control Section of the Michigan Department of Natural Resources. Although the Act requires that vehicles used in these activities be inspected before licensing, this is not currently being performed.[77]

1970 P.A. 231: Natural River Act. The Natural River Act is another Michigan Law which attempts to keep development in harmony with nature. This Act allows the Michigan Natural Resources Commission to designate a portion of a river as a natural river for the purposes of "preserving and enhancing its values for water conservation; its free flowing condition; and its fish, wildlife, boating, scenic, aesthetic floodplain, ecologic, historic, and recreational values and uses." In general, this Act attempts to create development setback requirements around designated waterways. Such setback requirements would include septic tank buffer zones.

The Act allows local government and citizen groups to apply to the State for such natural river designations. The Michigan Land Resources Division then provides technical assistance in developing a plan to preserve the river. Having this plan, the local governmental unit presiding over the land in question must then develop zoning ordinances to meet the desired results. In some cases, the Michigan Natural Resources Commission may develop and implement zoning ordinances of its own.[78] The amount of designated river mileage and the impact of the program on control of private sewage systems.

Evaluation

As noted above, there is authority to control septic systems, with the emphasis on public health. In general, it appears that a local health department provides a reasonable level of review prior to the construction of a septic tank. Postconstruction surveillance, however, is not widely performed. Consequently, the upkeep and proper maintenance of septic tanks is a potential water quality problem. The disposal of septage by homeowners is another potential water quality concern. Although these deficiencies are largely attributed to the financial constraints of local health departments, there are no existing guidelines which require local health departments to fulfill this ongoing monitoring function.[79]

The program should be strengthened by placing emphasis on increasing the effectiveness and use of existing and new systems. Additional resources should be used to encourage better system maintenance through an improved program for inspection of operating systems.[80]

Unlike 1969 P.A. 136 which regulates industrial waste haulers, P.A. 243 does not require septic tank cleaners to record the source of septage and disposal sites. The Act simply requires that all wastes be disposed of at municipal treatment plants or other adequate facilities. This appears to be a deficiency in the Act and could result in varying degrees of water pollution.

The Act does not apply to property owners cleaning their septic tanks, to municipalities serving and maintaining public facilities, or to master plumbers licensed under the laws of Michigan. The pollution caused from these sources is unknown. If it is found to be serious, these exceptions could result in critical gaps in the water quality program.[81]

3.3.4 Transportation Corridors

Magnitude of the Problem

Transportation affects the quality of surface water through runoff from highways and airports. Construction-caused sediment, oils and salts leaching into adjacent soils, herbicide applications along roadside and railroad sites, and accidental spillage are also problems. Certain forms of solid waste, such as litter or debris, are also found near highways and railroads; but nutrient loading is seldom a significant runoff from transportation.[82] Michigan is considered to have a low level problem with regard to nonpoint pollution impacts resulting from transportation systems.

Current Activities

In Michigan, sedimentation should be reduced in the years ahead due to the implementation of the Soil Erosion and Sedimentation Act of 1972. This program will not only require erosion controls during construction, but it should also lead to early mulching and planting of cuts and ditches, which will reduce subsequent erosion as well. While it is not possible to tell how beneficial these measures will be, it is generally anticipated that highway erosion will become less important as a source of sediments in the future.[83]

There are no controls on the use of salt for de-icing, and no control program for spreading salt on streets is followed by local public works departments.[84] Fertilizer controls and the control of herbicides are the same as discussed in the Agriculture section.

Evaluation

Interviews with State officials indicate that erosion is adequately. controlled through the Soil Erosion and Sedimentation Control Act.[85] The application of salts, herbicides, fertilizers, etc. are not considered serious state wide problems by State officials, but they may cause local problems and could be serious if not properly controlled. Currently, control of these potential problems is fairly good.

3.3.5 Shoreline Landfilling

Magnitude of the Problem

With a few exceptions, the Great Lakes proper are deep enough for navigation, but in the connecting channels and harbors, this is seldom the case. As a consequence, considerable dredging has been accomplished over the years in order to create and maintain conditions which are conducive to the passage of vessels. Dredging falls into two categories--maintenance and new work.

Existing harbors and channels are periodically dredged in order to maintain the depths and widths for which they were originally designed. The need for such work arises from the sedimentation which is attributable to stream loads, littoral drift, industrial and municipal discharges, and channel sloughing. One may anticipate that sedimentation will continue at about the same rate as in the past, although improvements in wastewater discharges may noticeably reduce the deposition of material in one or two heavily industrialized harbors. If widely implemented, soil erosion programs could likewise reduce sedimentation. In general, however, there is a continuing need for maintenance dredging.

Since all or part of over 20 harbors and channels in Michigan have been classified by the U.S. Environmental Protection Agency as being polluted, the materials removed from them must be placed in confined spoil disposal sites. The process of identifying suitable sites has been underway for some time, although arrangements have not yet been made for nine

200

harbors. Construction is completed in other cases, and dredging has resumed. Where spoil is not found to be polluted, it is anticipated that open lake disposal will be used.[87]

There are indications that major new dredging projects may receive consideration over the next several years--the primary impetus being the possibility of accommodating deeper draft vessels. For example, by 1970, less than half of the total world fleet could have transited the St. Lawrence Seaway fully loaded; and nearly two-thirds of the ocean-going ships actually using the Seaway were in fact operating below capacity due to the system's depth.[88]

Land and construction excavations along the shoreline cause varying degrees of problems, depending on local conditions. The magnitude of the problems has not been identified in terms of water quality impacts.

Current Activities and Evaluation

Shoreline activities are controlled by the Shorelands Protection and Management Act, 1970 P.A. 245. The primary purpose of the Act is to provide a county, township, city or village with the specific authority to enact shoreland zoning for hazardous and sensitive areas. The Act addresses two areas, high risk flood hazardous areas and environmental areas.

Three hundred potential high-risk areas have been identified. The zoning ordinances adopted by the local governments will discourage development in these areas once the Federal Flood Plain Plans have been adopted. In addition, the local ordinances must meet DNR standards and DNR approval.

Environmental areas are also protectively zoned, with 300 miles of the 3,200 mile coastline to be designated as protected. The zones will leave wetlands and other sensitive areas in their natural state if they are within 1,000 feet of the Great Lakes. Currently, 114 miles of the 300 in need of protection are covered by some type of controls.[89]

To supplement the Shorelands Act, the Michigan Coastal Zone Management Program has identified the following activities it will support to improve water quality and control land use in the coastal zone.[90] The objective of these activities is to minimize damage from erosion and flooding by managing developments in flood and erosion hazard areas.

> *Inventory and Study Areas Having Flood or Erosion Problems*. Increase efforts directed toward: (1) analysis of aerial photographs to determine the rate of bluffline recession in erosion areas; and (2) analysis of topographic maps as well as engineering surveys to determine flood plain contours and boundaries.
>
> *Provide for Local Regulation of High-risk Erosion Areas*. Once bluffline recession studies are complete, building setback restrictions in high-risk erosion areas can be calculated and protective measures enforced. The Shorelands Protection and Management Act

currently enables local units to adopt and enforce zoning measures to safeguard developments in high-rise erosion areas. Counties, townships, cities, or villages may adopt, administer and enforce state-approved building setback restrictions. While the Shorelands Protection and Management Act now enables the State to enforce setback restrictions only in undeveloped and unplatted areas, local units have the option to regulate both platted and developed, as well as unplatted and undeveloped areas.

Conduct Studies and Provide Technical Assistance about Methods of Erosion and Flood Control. Funding is needed to install and monitor structural and non-structural low-cost erosion and flood control devices. The MDNR currently has 16 demonstration erosion control projects on Michigan't coast. Monitoring and evaluation is needed to provide individual property owners with information about these methods which offer the greatest protection at the lowest cost.

The Inland Lake and Streams Act 346 also controls activities on the shoreline by requiring that the DNR issue permits for dredging and construction activities along a shore or in the water. An Army Corps of Engineers permit must also be obtained for these activities.

Evaluation

The combination of the Shorelands Protection and Management Act and the Coastal Zone Management Program will, in the Contractor's opinion, provide adequate control of shoreline activities in Michigan. The implementation funding that is available through the Federal Coastal Zone Management Program should provide adequate resources to implement the program.

3.3.6 Extractive Operations

3.3.6.1 Pits, Quarries and Mining

Magnitude of the Problem

Michigan's mineral industry is an important contributor to the State's economy, especially in certain locales. During 1974, mineral production reached a record $1.06 billion, with iron ore, petroleum, cement, natural salines, and copper accounting for the greatest portion of this. In addition, the State was one of the top producers in the U.S., in value of production, of the following seven minerals--iron ore, natural salines, crude typsum, marl, peat, salt, and sand and gravel.[91]

Since Michigan has never permitted exploration of its portion of the Great Lakes bottomlands, very little is known about the extent and quality of the mineral resources which they may contain. However, it is possible that materials such as copper, iron ore, petroleum products, and sand and gravel are present in economically significant quantities. Manganese nodules have also been identified in Green Bay.

It is likely that there will be mounting pressure in the years ahead to at least permit exploratory operations in the Great Lakes. The United States' dependence upon foreign sources of petroleum and the concerns which this has raised are particularly suggestive of the demands which might be made for oil and gas drilling, either via shoreline or island locations or the bottomlands themselves. In addition, there may be pressures to search for oil and gas reserves which can provide Michigan with a margin of safety against the possibility of future shortages or inadequate distribution of dependence upon foreign sources is developing which likewise indicates that the search for new sources may intensify in the future. Finally, it appears that mining activities on the Outer Continental Shelf and perhaps elsewhere in the oceans could lead to the development of new technologies which would make the recovery of submerged minerals a more economically viable prospect in the future.[92]

Current Activities

Mining activities are controlled by the Mine Reclamation Act, 1970 P.A. 92 as amended. This Act applies to all open pit and surface mining, exclusing sand and gravel, peat, and clay operations, which are not controlled. The Act provides for the investigation of mining activities prior to installation. The intent of the Act is to protect the environment and the well being of the public from mining activities which are detrimental to either. Through the Act, the State's Geological Survey Division performs the following major functions:

- Receives notification or proposed open pit and surface mining activities in the State.
- Reviews environmental plans which must outline intended reclamation and soil stabilization practices.
- Recommends performance bonds in cases where there is some doubt that the mining activities will be conducted in harmony with the environment.
- Conducts semiannual visits of mining sites throughout the State. These visits compare proposed conservation practices to actual practices. Changes are then recommended where necessary.[93]

These functions are currently performed by a one-person staff. At present, there are approximately 50 mining operations covered by the Act.[94]

Soil erosion resulting from mining activities is not regulated by the Soil Erosion and Sedimentation Control Act of 1972, 1972 P.A. 347. Soil erosion controls can be required, however, through the Water Resources Commission Act, 1929 P.A. 245. Under this Act, the Michigan Water Resources Commission can control pollution of any surface or underground waterways in the State. This includes the regulation of pollution from mining activities. Action by the Water Resources Commission is typically initiated as a result of public complaints or the findings of special State studies. Consequently, although P.A. 245 is broad enough to address mine-related pollution, this Act does not specifically regulate mining activities.[95]

Evaluation

Surface mining activities are controlled through the Mine Reclamation Act, but the single staff person is inadequate to properly enforce the program. The rules and guidelines for the administration of the Act were formalized in November, 1976; and additional staff is being sought. Until such staff is procured, enforcement of the Act is not widespread.[96]

The Mine Reclamation Act also has two management deficiencies, one of which is exclusion of mining activities, such as sand and gravel, peat, and clay. Scattered local ordinances regulate these activities, but no statewide program regulates them. The second deficiency is the lack of a specific regulatory program to require minimum operating guidelines for open pit and surface mining. Performance bonds and environmental plans are not required in all cases.[97]

3.3.6.2 Brines from Oil and Gas Operations

Magnitude of the Problem

Deepwell disposal of waste products is widely practiced by producers of oil and gas. Both processed brines and the brine water by-products from oil and gas wells are returned to the formations from which they were withdrawn. It is expected that reinjection will continue to be the primary, if not the sole, means of disposing of these materials.[98]

Information on the number of oil and gas wells and the volume of brines and brine water by-products is unavailable.

Current Activities

The Conservation of Oil, Gas, and Mineral Act, 1939 P.A. 61, regulates the construction and operation of oil and gas wells. It also attempts to ensure the proper use of the State's resources during the lifespan of these wells. The Act requires that all oil and gas wells receive a State permit prior to installation. This program is administered by the Geological Survey Division of the Department of Natural Resources. There are approximately 50 field personnel responsible for this statewide program. Each field geologist is responsible for several counties.

Each application for a permit is made through the State's Lansing offices. Technical assistance is provided in completing the application. This then triggers the following activities:

- Field geologists inspect every proposed well site to ensure that proper environmental and soil conservation practices are being utilized.

- Upon approval by field and regional staff, the Department of Natural Resources issues the permit.

- Regular on-site inspections by field geologists are made at all wells during installation. These inspections ensure that adequate pressure testing, drilling, plugging and reclamation take place.

- In the cases where wells produce oil or gas, ongoing inspections are made to ensure proper utilization of the resources. One or two visits are made every year the well is in operation.[99]

Evaluation

A major aspect of this program is the regular on-site inspections conducted during installation. During these inspections, State geologists are able to recommend best management practices to protect the environment. Consequently, this program appears to be effective in reviewing the installation of oil and gas wells. This review process ensures that future water pollution from the operations of these wells will be reduced. Post-installation reviews further improve the effectiveness of this program.[100]

3.3.7 Recreation Areas

Magnitude of the Problem

This category includes pesticide use and private sewage disposal, both of which were described in earlier sections. The third land use activity, that of runoff that results from specific types of facilities, is not a problem of statewide concern, although it could be a localized problem from time to time. This is primarily an erosion problem that results in the overuse of a specific section of trails, whether from hiking, snowmobiling, or other types of use.[101]

Fishing, boating, long stretches of sandy beaches, a wealth of historic attractions, and fresh water for swimming have made Michigan's shore among the most popular Midwest tourism and vacation spots. Problems occur when crowded campsites, parks, beaches, and boating and fishing facilities detract from aesthetic and recreational appeal of the coastal area and place high public service costs on coastal communities.[102]

Current Activities and Evaluation

The control of the water quality impacts of nonpoint pollution caused by recreational activities falls into the indirect control category. These controls include the zoning and subdivision control powers of local general purpose governments, the Shoreland and Flood Plain Zoning Program, and local building inspection programs. The activities of the local governments in controlling the water quality impacts of recreational activities has not been identified.

The Coastal Zone Management Program is designed to assist local communities in controlling recreation activities so that the environment is not adversely impacted. This assistance is both technical and financial.[103] The implementation of this program should strengthen the current set of indirect controls.

3.3.8 Lakeshore and Riverbank Erosion

Magnitude of the Problem

Streambank erosion is considered to be a rather significant source of sediments in certain streams in Michigan. It has been estimated that there are about 5,900 bank miles of erosion damage, resulting in nearly 164,000 tons of sedimentation annually.

While streambank erosion is in part a natural process, it has also been accelerated in many instances by the impact of man's activities. Pedestrian traffic along banks is one of the most commonly cited problems, as fishermen, conoeists, hikers, bikers, and others trample protective vegetation and loosen soils. Livestock have similarly been implicated when permitted to wander along streambanks.[104]

Current Activities

The control of lakeshore and riverbank erosion is a combination of direct and indirect controls. These include the Natural Rivers Act, the Inalnd Lakes and Streams Act, the Shoreland Protection and Management Act, the Soil Erosion and Sedimentation Control Act, and local zoning and subdivision ordinances. These control the uses of land adjacent to streams and the lakeshore, the thus have an impact on the rate of runoff which causes the erosion. The cumulative impact of these different controls is unknown.

3.3.9 Forested Areas

Magnitude of the Problem

Michigan's forested land base encompasses 19.35 million acres, which is about 53 percent of the State's total surface area. Approximately four-fifths of this acreage lies in the Upper Peninsula and northern Lower Peninsula, where, during the next 10 to 20 years, the forests will be maturing into their prime from a timber production point of view. At the same time, timber supplies in the western United States are expected to decline, since they are presently being heavily utilized. Furthermore, projections of the demand for saw timber and other forest products in the United States suggest that there will be pressures to expand future sources of supply. Thus, it appears that Michigan's forests may be receiving increasing attention as a potential generator of commercial timber.

In this regard, a variety of possible forestry activities have been identified. First, pulpwood mill capacity could possibly be expanded in the Upper Peninsula. Second, forests in the eastern Upper Peninsula and northern Lower Peninsula probably could support a major, new, integrated wood-using industry, and, in turn, secondary user industries. Third, technological changes point at the ever-increasing utilization of cull trees and little-used species, thus expanding the market for timber that was heretofore unuseable. Finally, since expanded logging activities and their associated industries would provide jobs in areas that have experienced difficult economic conditions in the past, affected local populations may often desire to put the surrounding forests to commercial use.[105]

Potential pollutants from forest runoff include soil particles, nutrients, and pesticides. At present, localized sedimentation is the only concern which has been identified; and it appears to be of minor consequence. There is, however, the potential for increased sedimentation in the future, given the possibility of expanded logging operations within the next 10 to 20 years.[106]

Current Activities and Evaluation

In general, it appears that increases in the amount of cutting will not lead to serious increases in sedimentation. Michigan's forests are, in the first place, usually well suited to logging operations, since their soils are generally not highly erodible. In addition, the lack of steep slopes and the high infiltration capacity of most forest soils reduce the dangers of rapid runoff. Finally, numerous management techniques are available which can, if properly applied, minimize any potentially adverse impacts. Borders along rivers, for example, will trap sediments and leave undisturbed the canopy of shade over streams. In addition, the size of individual clearcuts will probably decrease and be more carefully tailored to the landscape so that harvesting on State forests and, to a lesser degree, on private lands will be similar to federal guidelines, which call for 25 acre cuts on national forests. At the same time, the total amount of clearcutting may increase, since this is a major form of regeneration for many of Michigan's forest species.

The greatest potential for sedimentation will come from haul roads (especially at stream crossings) and skid trails. Thus, the proper selection and careful maintenance of these facilities will be the key to minimizing the potential for erosion. Although the harvest area itself is exempt from the provisions of the Soil Erosion and Sedimentation Act, haul roads to and from the area are subject to this law and another one which governs stream crossings. Thus, the application of various permit requirements is expected to provide suitable controls over the construction and maintenance of roads.[107]

207

FOOTNOTES - CHAPTER 3

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9. Ibid.
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208

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25. Ibid. Pages VI-49, 50.

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36. Ibid. Page VI-26.

37. Ibid. Page VI-26.

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39. Op. Cit. Touche, Ross & Co. Page VI-34.

40. _Op. Cit_. Interview with James Truchan.

41. Interview, Mr. William Marks, Michigan Department of Natural Resources, July 12, 1977.

42. _Op. Cit_. Water Resources Commission, Page IV-22,23.

43. _Ibid_. Page IV-23.

44. _Ibid_. Page IV-24.

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46. _Op. Cit_. Touche, Ross & Co, Page VI-34.

47. _Op. Cit_. Interview, William Marks.

48. _Ibid_.

49. _Op. Cit_. Interview, James Truchan.

50. _Op. Cit_. Water Resources Commission, Page IV-21, 22.

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52. _Op. Cit_. Touche, Ross & Co., Page VI-32.

53. _Ibid_. Page VI-32.

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55. _Op. Cit_. Water Resources Commission IV-23.

56. _Op. Cit_. Touche, Ross & Co., Page VI-33.

57. _Op. Cit_. Water Resources Commission, Pages IV-41, 42.

58. Interview, Richard Simms, Director, Water Quality Management Planning Program, Southwest Michigan Regional Planning Council, July 13, 1977.

59. Interview, Stanley R. Quakenbush, Deputy Commissioner for Intercounty Drains, Michigan Department of Agriculture.

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211

88. _Ibid_. Page III-35.

89. Interview, Merle Raber, Michigan Department of Natural Resources, July 12, 1977.

90. Michigan Coastal Zone Management Program, _Proposed Action Programs_, Michigan Department of Natural Resources, May, 1977, Pages 5-7.

91. _Op. Cit_. Water Resources Commission, Pages III-25.

92. _Ibid_. Pages III-27, 28.

93. _Op. Cit_. Touche, Ross & Co., Pages VI-42, 43.

94. _Ibid_. Page VI-44.

95. _Ibid_. Page VI-43.

96. _Ibid_. Page VI-43.

97. _Ibid_. Page VI-43.

98. _Op. Cit_. Water Resources Commission, Page IV-29.

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100. _Ibid_. Page VI-46.

101. _Op. Cit_. Interview, Merle Raber.

102. _Op. Cit_. Michigan Coastal Zone Management Program, Action Programs, Page 17.

103. _Ibid_. Pages 18-20.

104. _Op. Cit_. Water Resources Commission, Pages IV-29, 30.

105. _Ibid_. Page III-45.

106. _Ibid_. Page IV-28.

107. _Ibid_. Page IV-28.

CHAPTER 4

FRAMEWORK ANALYSIS

4.1 GENERAL

This chapter presents the Contractor's analysis of the legislative framework for the State of Michigan. Included is the identification of the strengths and weaknesses in the framework and the future actions which could correct the weaknesses. This analysis is based on the evaluation of the different land use activities as presented in Chapter 3.

4.2 STRENGTHS, WEAKNESSES AND FUTURE ACTIONS

The following land use activities are noted for their strengths and weaknesses. This discussion of each of them summarizes the problem, the current framework and its strengths/weaknesses and presents future actions which could correct any weakness.

4.2.1 Urban Construction Site Runoff[1]

The Soil Erosion and Sedimentation Control Act of 1972, 1972 P.A. 347, is a strong piece of legislation designed to control sedimentation from earth moving activities. The Department of Natural Resources is in charge of the program, in partnership with counties and other units of local government. The DNR has established standards for program implementation, with the local governments developing and implementing their programs within those guidelines. The DNR must certify local programs before they can be implemented.

There are two types of local agencies, Local Enforcing Agencies (LEA's) and Authorized Public Agencies (APA's). An LEA receives applications from private and public bodies who wish to undertake major earth moving activities. The LEA then issues permits, if the proposed activities meet the requirements of the Act. An APA is a public agency which undertakes many earth moving activities as part of its normal operations. As an APA, it can police itself, as long as its activities are within its approved program. This allows public agencies with many earth moving activities to receive blanket approval, rather than creating an administrative problem with unreasonable numbers of individual project permits. Both LEA's and

APA's are required to conduct on-site monitoring of the activities permitted by them.

The DNR provides technical assistance and spot inspection of activities to the LEA's and APA's. Currently, the DNR has assigned a three-person staff to the program, which is short of the six to eight-person staff estimated by the DNR to be necessary to adequately implement the program.[2] In addition to the resource shortage, the program also does not provide for effective State control over the LEA's and APA's once their programs have been certified. The State may provide technical assistance and some program guidance, but it has no authority to improve a local program short of decertification. This results in the lack of uniform enforcement practices throughout the State.

The problem of insuring that APA's adequately carry out surveillance of their construction activities has not been completely resolved. In general, this surveillance seems to be insufficient; and the DNR lacks the resources to insure that adequate surveillance is completed.

These problems are in the implementation of the program, not in the legislative framework of the Act. The framework is workable in achieving the goals, but refinements may be necessary in the future to achieve maximum effectiveness.

The Act does seem to have a structural problem which should be rectified in the near future. This is the problem of funding for the LEA's and APA's. The financial burden of implementation has been placed on the local governments. They do have authority to charge fees to private applicants, but these are not sufficient to fund all local activities. In addition, exclusive use of a fee structure funding mechanism applies unnecessary pressure to approve a project because of the money spent on fees (up to $10,000), rather than the merits of the application.

Overall, the Michigan program to control construction site runoff is an excellent one, and the weaknesses mentioned above are refinements that come about through implementation. The Contractor recommends that this program be used as a model by other states in implementing their own construction site controls.

4.2.2 Urban Stormwater Runoff[3]

Currently, Michigan has no direct controls over urban stormwater runoff. The Subdivision Control Act requires numerous approvals, but the impact of increased runoff is not expressly reviewed. State officials point out that this is one of the State's most serious nonpoint pollution problems, and solutions must be developed. Rather than initiate a separate study, the DNR is awaiting the results of areawide water quality management plans (208) currently being prepared in each of the State's 14 regions. These plans are required to develop locally acceptable solutions to stormwater runoff and must be certified by the Governor. From these plans, the

214

DNR hopes to coordinate a statewide urban stormwater runoff control program. This may require additional legislation.

4.2.3 Erosion from General Farm Practices[4]

No agricultural activities are currently regulated with the objective of reducing sedimentation. Soil Conservation Districts operate voluntary programs, and individual farmers may receive cost share assistance from the USDA's Agricultural Stabilization and Conservation Service. The Michigan Soil Erosion and Sedimentation Control Act will control agricultural practices beginning January 1, 1979. The plowing and tilling of land for the purpose of crop production and the harvesting of crops are exempt from the definition of agricultural practices.

The execption of plowing and tilling is a major weakness in the control of agricultural erosion. The DNR is awaiting the completion of the areawide water quality management plans before it seeks modifications to the Soil Erosion and Sedimentation Control Act, so that all agricultural practices are included in the Act. These management plans are scheduled for completion by November, 1978.

An additional consideration to insure the implementation of controls must be the development of a cost share program with greater resources than those currently available through the Federal program. From the Contractor's viewpoint, any program lacking this feature will have severe implementation problems.

4.2.4 Solid Waste[5]

The Solid Waste Management Act, 1965 P.A. 87, provides the DNR with adequate authority to control the disposal of solid wastes. This authority includes requirements for planning solid waste systems and licensing and regulating of disposal facilities and transportation vehicles. These licenses must be renewed annually.

The weakness in the control of solid waste is in the implementation and enforcement of the authority. Specifically, there is a lack of ongoing surveillance of active landfills, a lack of monitoring of inactive landfills, and no licensing of private individuals transporting their own refuse.

Action by the State to correct these weaknesses is awaiting the completion of the areawide water quality management plans (208). These plans are required to recommend solutions to correct the weaknesses.

4.2.5 Private Sewage Systems[6]

The authority to control private sewage systems is adequate; but, again, implementation and enforcement are problems. The approval of plans and inspection of construction activities is generally adequate.

Inspection of operation and maintenance is generally lacking; thus, failing systems generally go uncorrected.

As a result of the areawide water quality management plans, it is anticipated that approximately 100 communities will be added to new or existing wastewater collection and treatment systems. These communities are those that have the worst problems from failing or inadequate septic systems. Thus, with the completion of the collector systems in these communities, the problem will become a minor one. No furture action has been identified to improve the inspection of the remaining septic systems to minimize problems in the future.[7]

The Contractor concludes that better management of on-site disposal systems should be practiced in the areas outside of the 100 communities where public sewers will be constructed. Better supervision over the location of new systems to avoid the essential need for public sewers in low density areas will also be likely.

FOOTNOTES - CHAPTER 4

1. See discussion of the problem, current activities, and evaluation in Section 3.3.1.1.
2. Interview, Mark Hargitt, Michigan Department of Natural Resources, July 12, 1977.
3. See discussion of the problem, current activities, and evaluation in Section 3.3.1.2.
4. See discussion of the problem, current activities, and evaluation in Section 3.3.2.4.
5. See discussion of the problem, current activities, and evaluation in Section 3.3.3.1.
6. See discussion of the problem, current activities, and evaluation in Section 3.3.3.3.
7. Interview, William Marks, Michigan Department of Natural Resources, July 12, 1977.

PART II

SUMMARIES OF LEGISLATION

CHAPTER 5

RELEVANT LEGISLATION

5.1 GENERAL

This Chapter presents a summary of the legislative authority for control of land use activities that may cause water pollution. Where information was available, the legislation is summarized by act with the implementing agency, affected land use activity, purpose, provisions, and administrative responsibilities identified. Where the Contractor is unable to secure information allowing summarization, the acts are listed.

A listing of the acts which are summarized follows:

- Soil Erosion and Sedimentation Control Act, 1972 P.A. 347
- Water Resources Commission Act, 1929 P.A. 245
- Resource Recovery Act, 1974 P.A. 366
- Solid Waste Management Act, 1965 P.A. 87
- Shoreland Protection and Management Act, 1970 P.A. 245
- Natural River Act, 1970 P.A. 231
- Soil Conservation District Law, 1973 P.A. 297
- Drainage Code, 1956 P.A. 40
- Mine Reclamation Act, 1970 P.A. 92
- Mineral Well Act, 1969 P.A. 315
- Farmland and Open Space Preservation Act, 1974 P.A. 116
- Inland Lake and Streams Act 346
- Township Zoning Act 1943 P.A. 184
- Township Planning Commission Act of 1959
- County Zoning Act, 1943 P.A. 183
- City and Village Zoning Act, 1921 P.A. 207
- County Planning Act, 1945 P.A. 282
- Regional Planning Act 281
- Municipal Planning Act, 1931 P.A. 285
- Guidelines for the Preparation and Review of Environmental Impact Statements, Executive Order 1974-4

219

Acts which were identified in the literature review, but for which detailed information on specific provisions is not available, are as follows:

- Liquid Industrial Waste Haulers Act, 1969 P.A. 136
- Watercraft Pollution Control Acts
- Sanitarians Registration, 1963 P.A. 147
- Water Supply Testing, 1966 P.A. 294 and 1919 P.A. 146
- Mobile Home Parks, 1959 P.A. 243
- Campgrounds, 1970 P.A. 171
- Privies, 1881 P.A. 136
- Outhouses, 1939 P.A. 273
- Septic Tanks, Seepage Pits, and Cesspools, 1951 P.A. 243
- County Public Works Act, 1957 P.A. 185
- Fourth Class Cities, 1895 P.A. 215
- Home Rule Cities Act, 1909 P.A. 279
- General Law Villages Act, 1895 P.A. 3
- Home Rule Villages Act, 1909 P.A. 278
- Subdivision Control Act, 1967 P.A. 288
- Construction and Maintenance of Private Sewage Disposal, 1939 P.A. 273
- Servicing and Cleaning Act, 1951 P.A. 243
- Great Lakes Submerged Lands Act 247

POLITICAL JURISDICTION: Michigan

Title or Reference: Soil Erosion and Sedimentation Control Act, Act No. 347, Public Acts of 1972 as amended by Act 197, Public Acts of 1974, Regulations

Implementing Agency: Soil Conservation Districts, Counties, Villages, Towns, Municipalities, Department of Agriculture, Water Resources Commission, DNR

Affected Land Use Activities: Urban Areas, Construction Site Runoff, Transportation Corridors, Recreation

Purpose:

To provide for the control of soil erosion and to protect the waters of the State from sedimentation.

Provisions:

1. Defines "earth change" as a man-made change in the natural cover or topography of land, including cut and fill activities, which may result in or contribute to soil erosion or sedimentation of the waters of the State. In this act, earth change does not apply to land on which there is occurring logging, mining, or the plowing or tilling of land for the purpose of crop production or the harvesting of crops.

2. Defines "land use" as use of land which may result in an earth change, including, but not limited to, subdivision, residential, commercial, industrial, recreational or other development, private and public highway, road construction, drainage construction.

3. Requires the Department of Agriculture, with the assistance of the Soil Conservation Districts, and in consultation with appropriate State and local agencies, to prepare and submit to the commission, for the commission's approval, a unified statewide soil erosion and sedimentation control program, which will:

   a) identify land uses which may be governed by the Act;

   b) include recommendations, guidelines and specifications for control of erosion for the identified land uses to prevent sedimentation of the waters of the State;

221

   c) set forth means by which agricultural practices shall be in compliance with the guidelines and specifications of the Act.

4. Requires the Water Resources Commission to make available to the Department of Agriculture:

   a) information on the effects of sediments on water quality and the damages of water resources that may be attributed thereto;

   b) the location of waters which are degraded or have the potential for being degraded by sedimentation; and

   c) water quality standards which must be included to protect the designated uses of the waters of the State.

5. Authorizes the Water Resources Commission, with the assistance of the Department of Agriculture, to prepare rules for a unified soil erosion and sedimentation control plan, including provisions for the review and approval of site plans, land use plans or permits relating to erosion and sedimentation control.

6. Requires that copies of ordinances passed by local governmental units be submitted to the WRC for review and approval. The Commission must send a copy to the appropriate soil conservation district for review and comment.

7. Authorizes Soil Conservation Districts to enter into agreements with:

   a) an authorized public agency or a county or local enforcing agency to furnish assistance and advise in overseeing and reviewing compliance with adequate soil and sedimentation control procedures, and in reviewing existing and proposed land uses, land use plans or site plans with regard to technical matters pertaining to soil erosion and sedimentation;

   b) persons engaged in agricultural practices who will agree to pursue such practices in accordance and subject to the rules promulgated by the Commission.

8. Allows a State, local or county agency to apply to the WRC for designation as an authorized public agency by submission to the commission the soil and sedimentation procedures governing all land uses normally undertaken by the agency.

9. Provides the commission with the authority to designate a State, local or county agency as an authorized public agency.

10. Designates the county as responsible for the administration and enforcement of rules throughout the county, except:

    a) within a city, village or charter township that has an approved ordinance designed to control soil erosion and sedimentation;

    b) with regard to land uses of authorized public agencies approved by the Water Resources Commission.

11. Authorizes the County Board of Commissioners, by resolution, to designate a county agency as the county enforcing agency responsible for administration and enforcement in the name of the county. The resolution may set forth a schedule of fees for inspections, plan reviews and permits and other pertinent matters. A copy of the resolution must be sent to the Water Resources Commission.

12. Allows two or more counties to provide for joint enforcement and administration of the law by an interlocal agreement.

13. Requires the county or any local enforcing agency to submit notice of violations to the Water Resources Commission.

14. Allows any county or local enforcing agency to enter upon private or public property for the purpose of inspecting and investigating conditions.

15. Allows the county or any local enforcing agency to require deposit of funds or a bond to assure installation of protective or corrective measures as a condition of issuance of a permit.

16. Authorizes a city, village, or charter township to adopt a soil erosion and sedimentation ordinance within its boundaries, except when:

    a) a charter township will not be applicable within a village that has an ordinance providing soil erosion and sedimentation control;

    b) ordinances are not applicable to land uses of an authorized public agency.

17. Requires the ordinance to designate a local enforcing agency.

18. Allows a city, village or charter township to consult with soil conservation districts for assistance and advise in preparation of the ordinance

223

is within 500 feet of a lake or stream of this state:

a) transportation facilities, including streets, highways, railroads, airports, common carrier pipelines and mass transit facilities, except normal maintenance procedures such as earth or gravel road leveling and minor repairs or alterations to rights of way not affecting a alke or stream;

b) subdivision or lot development as defined by section 102 of Act No. 288 of the Public Acts of 1967, being section 560.102 of the Michigan Compiled Laws. mobile home parks and multiple housing, and the preparation of a site for a single family residence and except normal maintenance or landscaping activities or both;

c) industrial or commercial development, except normal maintenance or landscaping activities or both;

d) service facilities, including, but not limited to shopping centers and schools, except normal maintenance or landscaping activities or both;

e) recreational facilities, including, but not limited to, parks, campgrounds or trails, except normal maintenance or landscaping activities or both;

f) utilities, including, but not limited to, underground pipelines or cables, except pole installation, service lines and other earth changes of a minor nature, normal maintenance and emergency repairs;

g) oil, gas and mineral wells, except the installation of those wells under permit from the supervisor of wells and wherein the owner-operator is found by supervisor of wells to be in compliance with the conditions of the sediment act;

h) water impoundments and waterway construction or improvements.

Regulation 323.1706

19. Describes procedures for obtaining a permit for a proposed earth change.

Regulation 323-1707

20. Details application review and permit procedures.

Regulation 323.1709

21. Describes the earth change requirements.

Regulation 323.1711

22. Requires the local agency or the general law township which issues building permits to notify the county or local enforcing agency immediately upon receiving an application for a building permit requiring an earth change which disturbs one or more acres of land, or if the the earth change is located within 500 feet of a lake or stream.

23. Prohibits the local agency or general law township from issuing a building permit until the county or local enforcing agency has issued the required state prescribed permit for the earth change.

Regulation 323.1712

24. Authorizes the county or local enforcing agency to revoke a permit upon its finding a violation of the sediment act.

Administrative Responsibilities:

The Department of Agriculture, with the assistance of the Soil Conservation Districts, is responsible for preparing a unified statewide soil erosion and sedimentation program. Both the Water Resources Commission and the Department of Agriculture are responsible for promulgating rules and regulations with regard to the program. The Water Resources Commission is also responsible for designating public agencies to administer and enforce the rules of the Act.

Cities, villages, and charter townships are responsible for preparing and adopting ordinances that provide for soil and sedimentation control, as well as designating local enforcing agencies. In the case where an ordinance has not been approved by the WRC, counties are responsible for administering and enforcing the Act.

In most cases, agencies at the county level are responsible for enforcing provisions of the Act.

225

POLITICAL JURISDICITON: Michigan

Title or Reference: Water Resources Commission Act (Act 245), Public Acts of 1929; Water Quality Standards for Intrastate Waters; Administrative Code, Part 4 (Water Quality Standards)

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: General Enabling Legislation

Purpose:

To create a Water Resources Commission to protect and conserve the waters of the State.

Provisions: (Water Resources Commission Act)

1. Organizes the Water Resources Commission.
2. Designates the Water Resources Commission as the State agency to cooperate and negotiate with other governmental units and agencies with regard to flood control, beach erosion control, and water quality control planning development and management.
3. Provides the Commission with the authority to control the alterations of natural or present watercourses of all rivers and streams in the State.
4. Requires the Commission to report to the Governor and legislature each year with regard to current and proposed plans and projects.
5. Authorizes the Commission to enforce any and all laws relating to the pollution of the waters and the obstruction of the floodways of the rivers and streams of the State.
6. Authorizes the Commission or any duly authorized agent to enter upon any private or public land for the purpose of investing and inspecting conditions of any waters.
7. Requires the Commission to establish pollution standards for lakes, rivers, streams and other bodies of public waters and to issue permits which will assure compliance with Federal and State standards to regulate municipal, industrial and commercial discharges.
8. Prohibits a person from filling or grading land for any purpose other than for agriculture in flood plain areas or in stream beds or in the channel of any streams unless the activity is permitted by order or rule or by a valid permit.

9. Prohibits the discharge of any raw sewage of human origin, unless the discharge is permitted by order or rule of the commission, or is subject of a valid permit.

10. Requires that every industrial or commercial entity which discharges solid wastes into any surface or ground waters or underground or on the ground other than through a public sanitary sewer have certified waste treatment or control facilities.

Water Quality Standards for Intrastate Waters

11. Defines and explains water uses.

12. Details the standards for receiving water according to their present or prospective water uses that are to be used in conjunction with a system of stream or lake sector designation.

Administrative Code, Part 4 - Water Quality Standards

13. Establishes water quality standards.

Administrative Responsibilities:

The Water Resources Commission is responsible for establishing water quality standards, issuing permits for wastes dischargers, promulgating all necessary rules and regulations for administration of the permit system and enforcing any and all laws relating to the pollution of the waters and the obstruction of the floodways of the rivers and streams of the State.

POLITICAL JURISDICTION: Michigan

Title or Reference: Resource Recovery Act, Act 366 of Public Acts of 1974

Implementing Agency: Department of Natural Resources (DNR), State Resource Recovery Commission

Affected Land Use Activities: Solid Waste

Purpose:

To encourage the conservation of natural resources through the promotion or development of systems to collect, separate, reclaim, recycle metals, glass, paper, and other materials of value from waste for energy purposes, and to provide a coordinated statewide waste management and resource recovery program.

Resource Recovery Act

1. Creates the State Resource Recovery Commission within the environmental protection branch of the Department of Natural Resources for the purpose of adopting a solid waste plan developed by DNR, recommending the approval or disapproval of waste management projects financed by the Department, and evaluating and making recommendations with regard to the solid waste management policies, standards and activities proposed by the Department.

2. Provides the DNR, with the approval of the Resource Recovery Commission, with the authority to:

    a) determine the location and character of a waste management project;

    b) enter into agreements with other municipalities or private enterprises to provide solid waste management services;

    c) make loans;

    d) borrow money and issue renewable bonds or notes.

3. Provides a municipality with the authority to acquire, purchase, construct, improve, maintain and operate jointly or individually a waste management project. The municipality's action shall not displace a licensed resource recovery waste facility or other waste management projects.

Regulation 299.5003-10

4. Details the operations and procedures of the Resource Recovery Commission.

Administrative Responsibilities:

The Department of Natural Resources is responsible for developing a State solid waste plan; providing technical assistance to municipalities to plan, design, construct, finance and operate a solid waste management system; assisting with and coordinating efforts directed toward source separation for recycling purposes; promoting the proper storage, transportation, and ultimate disposal of materials contained in waste that cannot be recycled or recovered; and preparing an annual plan to the Commission. The Resource Recovery Commission is responsible for adopting the solid waste plan developed by DNR and advising the Department on matters regarding solid waste disposal. The Commission is also responsible for enforcing provisions of the Resource Recovery Act.

229

POLITICAL JURISDICTION: Michigan

Title or Reference: Public Act 87, Solid Waste Disposal Act (1965)
as amended by Act 89 of the Public Acts of
1971 and by Act 57 of 1973

Implementing Agency: State Department of Health, local health agencies

Affected Land Use Activities: Solid Waste

Purpose:

To protect the public health and to provide for planning and conducting refuse management systems.

Provisions (Solid Waste Disposal Act):

1. Prohibits the disposal of any refuse at any phase except at a licensed disposal area.

2. Prohibits the establishment, management, maintenance or operation of a disposal area without a license from the Commission. Each year an application for licensing must be made through the health officer on a form produced by the Commissioner. In the absence of a full-time organized local health department, the application should be made directly to the Commissioner.

3. Provides the Commission with the authority to revoke a license if the disposal area is not operated in accordance with the act and adopted rules and regulations.

4. Requires each refuse transporting unit to be licensed and stipulates that each unit used for garbage, industrial or domestic sludge be watertight and be constructed, maintained and operated so as to prevent littering.

5. Requires every village, city or township with a population of 10,000 or more and every county to file with the Commissioner for his review and approval a report including proposal to meet present and future refuse disposal needs through the year 1990.

Regulation 325.2702

6. Details the general requirements for licensing.

230

Regulation 325.2721

7. Describes the design for a sanitary landfill. In certain cases a sanitary survey and a land use plan of the adjacent areas may be required.

Regulation 325.2722

8. Discusses preparation of a sanitary landfill site.

Regulation 325.2723

9. Details operating procedures for a sanitary landfill.

Regulation 325.2731

10. Prohibits open dumps unless the location and specific method of operation has been approved in writing by the health department.

Regulation 325.2741-9

11. Details the construction, operation and maintenance of a refuse transporting unit.

12. Provides the director or health officer of a local health agency with the authority to revoke a license, to grant variances from the rules, and to make routine inspections and evaluations of refuse transporting units.

13. Details the information to be included in the solid waste plan development report:

    a) general goals and objectives;

    b) jurisdictions and commitments;

    c) description of areas;

    d) transportation networks;

    e) solid waste general and inventory of systems;

    f) recommended systems and feasible options;

    g) implementation of plans.

14. Requires review and updating of the report at least every two years.

231

Administrative Responsibilities:

Both the Commissioner of the State Department of Health and the local health department officers are responsible for inspecting proposed sites and determining whether these operations comply with the relevant provisions of the Act. The Commissioner is also responsible for issuing licenses and promulgating rules which contain standards for refuse transporting units and disposal areas.

POLITICAL JURISDICTION: Michigan

Title or Reference: Shoreland Protection and Management Act of 1970, Act 245

Implementing Agency: Water Resources Commission

Affected Land Use Activities: Shoreline Landfilling; Lakeshore and Riverbank Erosion, Urban Areas; Agricultural

Purpose:

To provide protection and management of shorelands through the development and use of a management plan and adoption of zoning ordinances.

Provisions:

1. Authorizes a county, city, village or township to zone any shoreland.
2. Requires that an existing zoning ordinance, or modification or amendment which regulates a high-risk area, a flood risk area, or an environmental area, be approved by the Commission.
3. Requires that the Water Resources Commission prepare a plan which includes:
    a) an inventory and identification of the use and development characteristics of the shoreland;

    b) an inventory of existing federal, state, regional and local plans for management of the shorelands;

    c) identification of problems associated with shoreland use, development, conservation, and protection;

    d) a provision for continuing inventory of shoreland and estuarine resources;

    e) a provision for further research;

    f) the identification of high-risk and environmental areas in need of protection
4. Provides the Department of Natural Resources and the Commission with the authority to enter into agreements with the federal government, local agencies and private individuals, to make studies and plans for managing the shoreland resources.

233

5. Determines whether the use of a high-risk area shall be regulated or suitable methods of protection shall be installed to prevent property loss.

Administrative Responsibilities:

The Water Resources Commission is responsible for promulgating rules and regulations with regard to high-risk and environmental areas. The Commission is also responsible for preparing a plan for the use and management of the shoreland.

POLITICAL JURISDICTION: Michigan

Title or Reference: Natural River Act of 1970, Act 231

Implementing Agency: Natural Resources Commission

Affected Land Use Activities: Recreation, Shoreline Landfilling, Forested Areas

Purpose:

To permit the Natural Resources Commission to designate a river or a portion thereof as a natural river area for the purpose of preserving and enhancing its values for water conservation.

Provisions:

1. Authorizes the Natural Resources Commission to acquire lands or interests inlands adjacent to designated natural rivers, including easements to provide for preservation and limitation of development without providing public access for use. Acquisition may only be achieved by owner's consent.

2. Authorizes the Natural Resources Commission to determine the appropriate land use

3. Establishes zoning districts within which such uses as agriculture, forestry, recreation, residence, industry, commerce, and additional uses may be encouraged, regulated or prohibited.

4. Allows the Commission to determine the placement of structures with relation to the water's edge; regulates the subdivision of land; and controls the location and design of highways, roads, and public utility transmission.

5. Allows the Commission to prohibit or limit the cutting of trees or other vegetation, but such should not apply for distances of more than 100 feet from the river's edge.

6. Allows the Commission to prohibit or limit mining and drilling for gas and oil, but such limits shall not apply for distances of more than 300 feet from the river's edge.

7. Provides the Commission with the authority to approve preliminary and final plans for site or route location, construction or enlargement of

utility transmission lines, access sites, recreation facilities, within a designated natural river area, except within limits of a city or incorporated village.

Administrative Responsibilities:

The Commission is responsible for preparing a long-range comprehensive plan.

POLITICAL JURISDICTION: Michigan

Title or Reference: Soil Conservation District Law, 1937 PA 297

Implementing Agency: Soil Conservation Districts

Affected Land Use Activities: Agriculture

Purpose:

To establish soil conservation districts.

Provisions:

1. Provides the authority to create soil conservation districts. Districts are created pursuant to a petition filed by 25 occupiers of land in the proposed district. The petition is then approved by the State.
2. Authorizes districts to develop a comprehensive plan for the district, conduct research and administer demonstration projects.

Administrative Responsibilities:

Soil conservation districts are responsible for conducting demonstration projects and carrying out conservation and soil resource operations.

237

POLITICAL JURISDICTION: Michigan

Title or Reference: Drainage Code, 1956 PA 40 (Chapter 22), Regulations

Implementing Agency: Water Management Districts, County Drain Commissions

Affected Land Use Activities: Agriculture, Drainage, Stormwater Runoff

Purpose:

To provide the authority to establish county drainage and inter-county drainage districts and water management districts.

Provisions:

1. Provides for the establishment of County Drainage Districts. The procedure for establishing the district must be initiated by submitting an application to the County Drainage Commissioner signed by at least 10 landowners in the township or townships where the drain is located. Drainage Districts wholly within one county can be established as County Drainage Districts and administered by the County Drainage Commissioner. Drainage areas involving more than one county become Inter-county Drainage Districts, administered by an Inter-county Drainage Board.

2. Provides the County Drain Commissioner with the authority to plan, design, construct, operate and maintain facilities to alleviate or prevent drainage problems. This includes storm drainage facilities. The Commission has jurisdiction over all drains within the county, and shared jurisdictions over intercounty drains.

3. Prohibits the Drain Commissioner from undertaking any project unless formally petitioned either by: 1) citizens or 2) a municipality within the county. Citizen requests typically come from individual farmers or groups of residents affected by a small-scale problem. Municipal requests may be considerably larger, such as construction of a major storm sewer system.

4. Provides the Drainage Board with the authority to determine the efficacy of individual projects brought before it by petition; makes surveys of the need for and magnitude of the project; establishes a drainage district which will benefit from the project; and establishes a special assessment district. Special assessments may be apportioned and collected by participating municipalities in the case of municipal

238

Regulation 323.1703

19. Details the Soil Erosion and Sedimentation Control Plan requirements, whereby the plan shall include, but not be limited to, the following, unless other information is required by the county or local enforcing agency:

    a) a map or maps at a scale of not more than 200 feet to the inch, or as otherwise determined by the county or local enforcing agency, including a legal description and site location sketch, which includes the proximity of any proposed earth change to lakes or streams, or both; predominant land features; and contour intervals or slope description.

    b) a soils survey or a written description of the soil types of the exposed land area contemplated for the earth change;

    c) details for proposed earth changes, including:

        (i) a description and the location of the physical limits of each proposed earth change;

        (ii) a description and the location of all existing and proposed on-site drainage facilities;

        (iii) the timing and sequence of each proposed earth change;

        (iv) a description and the location of all proposed temporary soil erosion control measures;

        (v) a description and the location of all proposed permanent soil erosion control measures;

        (vi) a program proposal for the continued maintenance of all permanent soil erosion control facilities which remain after project completion, including the designation of the person responsible for the maintenance. Maintenance responsibilities shall become a part of any sales or exchange agreement for the land on which the permanent soil erosion control measures are located.

Regulation 323.1704

20. Details the requirements for obtaining a permit to commence earth changes which are connected with any of the following land use activities which disturb one or more acres of land, or if the earth change

239

petitioners. Special assessments constitute drain taxes on affected properties, and failure to pay results in a lien being placed on the delinquent property.

5. Provides the Drainage Board with the authority to issue revenue bonds to finance its projects.

6. Requires an annual inspection of both county and intercounty drains by the Drain Commissioner or some other competent person appointed by him.

7. Allows drains to be established to control the flow, water level and seepage in drains. Dams may also be constructed to provide for drainage by the use of pumps or other mechanical means.

8. Requires that persons wishing to construct a dam submit a petition to the Drainage Commissioner for approval.

9. Provides for the construction of disposal plants and filtration beds.

10. Provides that when necessary for public health, drains be petitioned for solely by townships, cities and other local governmental units with taxation power. The petition must be submitted to the County Drainage Commissioner for approval.

11. Provides for the establishment of water management districts. The procedure for establishing a water management district must be initiated by local governmental units--not individuals.

12. The Districts are operated by a Watershed Management Commission. The Commission appoints a Water Management Board to review proposed projects and plans.

13. Authorizes Water Management Districts to undertake drainage and flood control improvement projects.

Administrative Responsibilities:

The Drainage Commissioner is responsible for planning, constructing and maintaining facilities to alleviate drainage problems. The Drainage Board is responsible for overseeing projects undertaken by the Drainage Commissioner.

Water Management Districts are responsible for undertaking drainage and flood control improvement projects. The Watershed Management Commission administers such projects.

240

POLITICAL JURISDICTION: Michigan

Title or Reference: Mine Reclamation Act, 1970, PA 92

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: Mining, pits and quarries

Purpose:

To control water quality degradation from mining activities.

Provisions:

1. Discusses revegetation and stabilization of surface and open pits in rocks and banks of unconsolidated material upon abandonment, and procedures for reclamating plant sites and mine areas at termination of mining operations.

2. Provides the DEC with the authority to grant variances to conduct otherwise prohibited mining activities.

Administrative Responsibilities:

Chief of the Geological Survey Division of the Department of Natural Resources is responsible for conducting a comprehensive survey.
The DNR is responsible for promulgation of rules and regulations with regard to mining activities.

241

POLITICAL JURISDICTION: Michigan

Title or Reference: Mineral Well Act, 1969 PA 315

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: Mining

Purpose:

To prevent surface and underwater waste caused by the abandonment, drilling and operating of mineral wells.

Provisions:

1. Requires the operator of the mine to obtain a permit prior to initiating mineral drilling activities.
2. Requires the owner of an abandoned mine to case, seal, and inject mechanical and chemical treatment into the abandoned well.

Administrative Responsibilities:

The Chief of Geology Survey Division, Department of Natural Resources, is responsible for inspecting and keeping records of mineral drilling activities. The Department is also responsible for issuing mining permits.

POLITICAL JURISDICTION: Michigan

Title or Reference: Farmland and Open Space Preservation Act
1974 PA 116

Implementing Agency: State Land Use Agency, Local Governments

Affected Land Use Activities: Agriculture

Purpose:

To preserve agricultural and open space uses with the concommitment to reduce urbanization and pollution.

Provisions:

1. Provides for the execution of development right agreements for open spaces or easements which dedicate the right to develop land to the public in perpetuity or for a stated term of years less than 10. The restrictions may not be disposed of except by mutual consent of the parties thereto. Agreements are subject to the approval of the local government. The granting of an application for development rights agreement or easements restricts land usage as follows:

    a) A structure may not be built on the land except that which is consistent with farming operations.

    b) Land improvements shall not be made except those for use consistent with farm operations.

    c) Interests in the land may not be sold except for scenic access or utility easement which does not substantially injure farm operations.

2. Restricts the use of land in dealing with open space development rights, so that easements must include the following provisions:

    a) Structures may not be built on land without State Land Use Agency approval.

    b) Land use improvements may not be made without approval of the Land Use Agency.

    c) Interest in the land can be sold only for scenic access or utility easements which do not substantially injure the open space character of the land.

d) Access to open space may be provided only if agreed upon by the owner, and the access does not jeopardize land conditions.

e) Any other conditions or restrictions agreed to by the parties deemed necessary to preserve the character of the land.

Administrative Responsibilities:

The State Land Use Agency and the local government unit are responsible for approval of a development rights agreement

POLITICAL JURISDICTION: Michigan

Title or Reference: Inland Lakes and Streams Act 346 of 1972

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: Shoreline Landfilling

Purpose:

To provide for the improvement of inland lakes, either of a public or private nature.

Provisions:

1. Requires any person conducting the following activities on inland lakes and streams to obtain a permit.
    - a) dredging or filling bottom land;
    - b) constructing or making alterations to remove a structure on bottom lands;
    - c) erecting or maintaining marinas, creating or enlarging or diminishing inland lakes or streams;
    - d) structurally interfering with the flow of streams;
    - e) constructing, dredging, extending or enlarging artificially, channels, canals or ditches, where the purpose is the ultimate connection of existing inland lakes or streams;
    - f) connecting any natural or artificially constructed waterways within existing lakes or streams.

Administrative Responsibilities:

The Department of Natural Resources is responsible for issuing permits.

245

POLITICAL JURISDICTION: Township

Title or Reference: 1943 PA 184, 183 as amended, Act 183, Act 184

Implementing Agency: Township Board, County Board

Affected Land Use Activities: All categories

Purpose:

To regulate the use of land.

Provisions:

1. Provides the boards of organized townships with authority to establish zoning districts in unincorporated portions of the townships and regulate the use of land.
2. Excludes from the township board the authority to regulate or control drilling, construction, or operation of oil and/or gas wells.
3. Permits non-conforming structures to continue which were present prior to the adoption of zoning ordinances prohibiting those uses.

Administrative Responsibilities:

Boards of organized townships are responsible for establishing zoning districts in unincorporated portions of the township. Each Board is also responsible for adopting ordinances that regulate the use of land.

POLITICAL JURISDICTION: Michigan

Title or Reference: Township Planning Act of 1959

Implementing Agency: Township Planning Commission

Affected Land Use Activities: Urban Areas; Agriculture; Liquid, Solid and Deepwell Disposal; Recreational Areas; Shoreline Landfilling

Purpose:

To provide for land use planning and implementation at the township level.

Provisions:

1. Requires that the plan include:
    a) maps, plats, charts, and descriptive, explanatory legend to show planning commission's recommendation for physical development of unincorporated area of township;
    b) the general location, character, and extent of streets, roads, highways, railroads, bridges, waterways and waterfront development, flood prevention works, drainage, sanitary sewers and water supply systems, works for preventing pollution and works for maintaining water levels and public utilities and structures;
    c) recommendations as to general character, extent, layout for the development or rehabilitation of blighted districts...changes, uses, or extension ways of grounds, open spaces, buildings, utilities and facilities.

Administrative Responsibilities:

The township planning commission is responsible for developing a basic plan of assembling and analyzing data, and formulating plans for conservation of all resources.

247

POLITICAL JURISDICTION: Counties

Title or Reference: 1943 PA 183 Act 183

Implementing Agency: County Boards

Affected Land Use Activities: All categories

Purpose:

To regulate the use of land.

Provisions:

1. Enables the county boards of commissioners to provide for establishment of zoning districts in portions of the county outside incorporated towns and villages.

2. Excludes from the county board the authority to regulate or control the drilling, construction, or operation of oil and/or gas wells.

3. Permits non-conforming structures to continue which were present prior to the adoption of zoning ordinances prohibiting such uses.

Administrative Responsibilities:

Each County Board of Commissioners is responsible for establishing zoning districts in unincorporated portions of that particular county. Each Board is also responsible for adopting ordinances that regulate the use of land in those districts.

248

POLITICAL JURISDICTION: Cities and Villages

Title or Reference: 1921 PA 207

Implementing Agency: Cities and Villages

Affected Land Use Activities: All categories

Purpose:

To regulate and restrict the use of land and the location of trades and industries and building location.

Provisions:

1. Provides cities and villages with the authority to enforce zoning ordinances.
2. Permits non-conforming structures to continue which were present prior to the adoption of zoning ordinances prohibiting such uses.
3. Provides villages and cities with the authority to acquire by purchase, condemnation or otherwise, private property for the removal of non-conforming uses and structures. Stipulates that property acquired by any of the above procedures may not be used for public housing.

Administrative Responsibilities:

Cities and villages are responsible for adopting zoning ordinances that regulate the use of land and the location of trades and industries and building locations.

POLITICAL JURISDICTION: Michigan

Title or Reference: County Planning Act of 1945 (Act 282)

Implementing Agency: County Planning Commissions

Affected Land Use Activities: Urban Areas; Agriculture; Liquid, Solid and Deepwell Disposal; Recreational Areas; Shoreline Landfilling

Purpose:

To establish a planning commission in each County; the function of which is to plan for integrated development of each county and the programming of capital improvements.

Provision:

Prohibits any work from being initiated on any project involving expenditure of funds by a county board, department, or agency for the acquisition of land, erection of structures, construction or improvement of any physical facility, unless full description of the project and the proposed location is submitted to county planning commission and the advice of the commission has been received by the County Board of Supervisors and by the group submitting the proposal.

Administrative Responsibilities:

The county planning commission's responsibilities include preparation of a plan for development of the county, coordination of all planning committees and commissions within the county, and the adoption and review of those plans.

POLITICAL JURISDICTION: Michigan

Title or Reference: Regional Planning Act 281

Implementing Agency: Regional Planning Commission

Affected Land Use Activities: Urban Areas, Agricultural Areas

Purpose:

To provide for regional planning.

Provisions

1. Provides for the establishment of regional planning commissions by resolution of two or more bodies of local governmental units desiring to create a regional planning commission.
2. Allows regional planning commissions to accept grants and gifts from public or private agencies or individuals.
3. Authorizes the Commission to conduct studies, collect and analyze data, and develop and adopt a plans for the physical , social and economic development of the region. These plans are to be forwarded to the Governor's Office of Planning Coordination.

Administrative Responsibilities:

The Regional Planning Commission is responsible for developing and adopting a physical, social, and economic development plan for the region.

251

POLITICAL JURISDICTION: Michigan

Title or Reference: Municipal Planning Act of 1931 (Act 285)

Implementing Agency: Municipalities

Affected Land Use Activities: Urban; Agriculture; Liquid, Solid and Deepwell Disposal; Recreational Areas; Shoreline Landfilling

Purpose:

To provide for municipal planning.

Provisions:

1. Authorizes the establishment of a municipal (municipalities may be referred to as cities, villages, townships, charter townships, and incorporated political subdivisions) plan, and planning commission.
2. Requires the commission to adopt regulations governing the subdivision of land within its jurisdiction.
3. Requires the planning commission to approve, modify or disapprove a plat within 60 days after its submission.
4. Stipulates that the master plan concentrate on the physical development of the municipality, including areas outside the municipality's boundaries bearing a relationship to planning within the municipality. Such plans should have reference to sanitation and resource control.

Administrative Responsibilities:

The municipal planning commission is responsible for developing a master plan and adopting regulations governing the subdivision of land.

252

POLITICAL JURISDICTION: Michigan

Title or Reference: Executive Order 1974-4; Guidelines for the Preparation and Review of Environmental Impact Statements under Executive Order 1974-4

Implementing Agency: Michigan Environmental Review Board

Affected Land Use Activities: All categories

Purpose:

To establish the Michigan Environmental Review Board.

Provisions: Executive Order 1974-4

1. Requires each agency of the State government to prepare an environmental impact statement on each proposed major action within their jurisdiction that may have a significant impact on the environment and human life and forward that statement to the Environmental Review Board.

2. Stipulates that (aside from statements prepared pursuant to federal or State statute or regulation) environmental impact statements shall contain the following information:

   a) a description of the probable impact of the action on the environment, including any associated impacts on human life;

   b) a description of the probable effects of the action which cannot be avoided (such as air or water pollution, threats to human health or other adverse effects on human life);

   c) evaluation of alternatives to the proposed action that might avoid some or all of the adverse effects, including an explanation why the agency determined to pursue the action in its contemplated form rather than an alternative;

   d) the possible modifications to the project which would eliminate or minimize adverse effects, including a discussion of the additional costs involved in such modifications;

253

Guidelines for the Preparation and Review of Environmental Impact Statements under Executive Order 1974-4

3. Defines major State activities as any policy, administrative action, or project proposed by an agency of the State which could reasonably raise the question about any of the following:

   a) a potential significant impact on the human environment that could adversely affect the public health and welfare or could degrade the quality of life;

   b) alteration or destruction of a significant element of the human, natural, amenity or historic resources of the State;

   c) significant alteration of existing land use patterns;

   d) significant alteration of population distribution of which would lead to potential distribution changes;

   e) significant impact on the maintenance and enhancement of the long-term productivity of the State's natural resources;

   f) the imposition of an alteration to the ecological balance of a significant element of the environment;

   g) significant additional uses of energy resources or the acquisition thereof.

4. Defines significant as:

   having an impact with regard to any part of the human or natural resources of the State that may notable and adversely affect humans, use for humans, for wildlife and fish populations, for scientific study, or may notably and adversely affect biotic communities. Significance is usually, but not exclusively, associated with largeness of scale, uniqueness or scarcity of resources, with the duration of adverse effects and with the rate of chemical, biological or physical alteration, but is not synonymous with only permanent or irreversible modifications. In considering the significance of any particular proposed activity, consideration must be given to the number and cumulative importance of other similar activities, present or proposed, so that the total effect on the environment is the focus of attention, and not the effect of any individual activity considered in isolation. Significant characterizes the scale of an action either in the size or importance of an element of the environment with regard to maintaining the structural integrity and the behavioral stability of the element and of the biologic system of which it is a part. The determination of significance should relate the size of the influence to the size of the element and systems affected.

5. Describes the submission and processing of an EIS as follows:

   a) upon completion of each EIS required by these Guidelines, the agency shall submit a copy thereof to the Governor, and 25 copies thereof to the staff of the Board. The statement shall contain all maps, appendices, charts, etc., upon which information or conclusions in the statement are based;

   b) upon receipt of the EIS, the Board's staff shall enter a brief title and description on a log and shall then forward a sufficient number of copies of the EIS to INTERCOM within five working days of submission;

   c) INTERCOM shall review each EIS and within 40 days of receipt, unless an extension is granted by the Board shall, by majority vote of the members present, recommend a course of action to the Board. INTERCOM shall review each EIS in the following manner:

      1) each EIS shall be distributed to all State agencies represented on INTERCOM for their comments,

      2) each EIS shall be reviewed to determine whether the elements and contents are complete, and that they contain a discussion and analysis (adequate in scope and quality for understanding and evaluation) of the issues. If INTERCOM finds the EIS inadequate in either respect, it shall immediately notify the Board's staff, indicating the respects in which the EIS is deemed insufficient, and the staff shall return the EIS to the agency within five working days for revision and resubmission, in which event the process set out in this part shall be renewed,

      3) if INTERCOM finds the EIS sufficient in all respects and that it does not contain unresolved issues nor concerns action having significant implications for the State's environment, it shall forward the statement to the Board with a written report covering its opinions and appraisals. This report shall include recommendations on: (a) the appropriate actions

255

the Board should take regarding the disposition of an EIS, and (b) whether or not the purposed activity/action should proceed as proposed. The Board shall act on such recommendations by a majority vote of its members; however, any four members of the Board may bring any EIS before the Board for its evaluation,

4) if INTERCOM finds that any EIS before it contains unresolved issues that may have significant implications for the State's environment or concerns actions having significant implications for the State's environment, it shall forward the EIS to the Board with its opinions and appraisals for review. In such a case, the Board shall review the EIS and may make its recommendations on the proposed action to the Governor,

5) if any significant changes are made in an EIS prior to final action by the Board, the modified statement shall be listed on the monthly list and made similarly available to the public as the original EIS. The Board shall not take final action on a modified statement until two weeks or more after the notification of a modified statement until two weeks or more after the notification of a modified statement has been made so as to allow time for public study and comments. If the Board determines that modifications have created an issue of general public concern or controversy, it shall take that issue into consideration before making its approval final.

6. Provides a detailed description of the contents and format for preparing an EIS.

7. Affords Board members the opportunity to register their objectives to Board adoption of substantive motions of recommendations to the Governor for inclusion with the Board's recommendations to the Governor.

Administrative Responsibilities:

The Michigan Environmental Review Board is responsible for advising the Governor and State agencies on environmental issues, making recommendations to the Governor, the Director of the Department of Natural Resources or other State agencies or environmental policy issues requested by the Governor, conducting hearings or conferences, and assisting the Governor in reviewing federal and State environmental impact statements and to identify agencies that should be suspended or modified if such actions should seriously threaten the quality of the environment or human life. The Inter-Departmental Environmental Review Committee (INTERCOM) which consists of one member from each State department is responsible for reviewing each EIS and forwarding its findings on each statement to the Board for final action.

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257

THE LEGISLATIVE AND INSTITUTIONAL FRAMEWORK TO CONTROL POLLUTION FROM LAND USE ACTIVITIES IN THE UNITED STATES GREAT LAKES BASIN

THE STATE OF MINNESOTA

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IN SUBCONTRACT TO
GREAT LAKES BASIN COMMISSION
ANN ARBOR, MICHIGAN

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November 1977

258

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TABLE OF CONTENTS

Page

PART I -- PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTER 1 -- INTRODUCTION

1.1 GENERAL 1

CHAPTER 2 -- DEFINITIONS AND METHODOLOGY

2.1 GENERAL 4
2.2 LAND USE ACTIVITIES 4
2.3 CONTROL COMPONENTS 5
2.4 METHODOLOGY 6

CHAPTER 3 -- INSTITUTIONAL AND LEGISLATIVE FRAMEWORK

3.1 GENERAL 9
3.2 INSTITUTIONAL STRUCTURE 9
  3.2.1 The Minnesota Pollution Control Agency 10
  3.2.2 Department of Natural Resources 11
  3.2.3 Department of Agriculture 17
  3.2.4 Environmental Quality Council 17
  3.2.5 Local General Purpose Units of Government 17
  3.2.6 Special Purpose Districts 21
3.3 LEGISLATIVE FRAMEWORK 24
  3.3.1 Urban Areas 24
  3.3.2 Agricultural Areas 31
  3.3.3 Solid, Liquid and Deepwell Disposal 40
  3.3.4 Transportation 45
  3.3.5 Extractive Operations 45

260

Page

3.3.6 Shoreland Filling 49

3.3.7 Recreation 50

3.3.8 Lakeshore and Riverbank Erosion 51

3.3.9 Forestry 56

CHAPTER 4 -- FRAMEWORK ANALYSIS

4.1 GENERAL 65

4.2 STRENGTHS, WEAKNESSES AND FUTURE ACTIONS 65

4.2.1 Urban Construction Site Runoff 65

4.2.2 Urban Stormwater Runoff 66

4.2.3 Private Sewage Disposal 66

PART II -- SUMMARIES OF LEGISLATION

CHAPTER 5 -- RELEVANT LEGISLATION

5.1 GENERAL 68

BIBLIOGRAPHY 91

PART I

PROBLEMS, CURRENT ACTIVITY, EVALUATION

CHAPTERS 1 and 2

(Refer to Chapters 1 and 2, State of Illinois, pages 1 - 8)

263

CHAPTER 3

INSTITUTIONAL AND LEGISLATIVE FRAMEWORK

3.1 GENERAL

This Chapter presents the institutional structure and the legislative framework for non point pollution control in the State of Minnesota. The institutions involved in non point pollution control are identified, and brief descriptions of the key institutions are presented.

The second section presents the legislative framework in matrix form, followed by a discussion of the magnitude of the problem, current controls, and evaluation of the controls and their implementation.

3.2 INSTITUTIONAL STRUCTURE

Pollution control responsibilities in Minnesota are shared between different State and Substate agencies. Table I presents those agencies for each level of government.

TABLE I

AGENCIES WITH NON-POINT POLLUTION CONTROL RESPONSIBILITIES

Minnesota Pollution Control Agency	Municipalities
Department of Natural Resources	Townships
Department of Agriculture	Counties
Environmental Quality Control	Soil and Water Conservation Districts
Department of Health	Watershed Districts
Department of Transportation	Regional Development Commission
	Metropolitan Council

264

3.2.1 The Minnesota Pollution Control Agency

The Minnesota Pollution Control Agency (MPCA) was created in 1967 and has been given increasing authority by the State legislature to regulate many activities affecting the environment. These authorities have come from both State and federal legislation.[1]

In carrying out the powers and duties assigned to the MPCA for water quality management, the agency has adopted standards controlling the quality and purity of the waters of the State and of the effluent discharged into these waters. To comply with these standards, individuals and corporations have constructed pollution control facilities or refrained from using certain portions of their land. In adopting purity and quality standards, the MPCA is required to consider the character, uses and value of the lands bordering the waters of the State, so land use considerations do play some part in the setting of standards.[2]

The MPCA has also been given the authority to engage in comprehensive planning for water quality purposes. Among other things, MPCA is empowered to develop basin and areawide waste treatment plans as directed by Section 303 of the Federal Water Pollution Control Act Amendments of 1972. Within the context of these plans, the MPCA is to consider and assess the effect of non point sources on water quality. Once identified and evaluated these non point source problems may be best dealt with through systems of land use control which are not directly within the powers of the MPCA.

Through State statute and through the Federal Clean Air Act, the MPCA is given authority to establish air quality standards and to adopt regulations and otherwise develop strategies to prevent, abate or control air pollution. Under terms of the Clean Air Act, the MPCA must insure that all air quality standards are attained in Minnesota and that those standards will be maintained.[3]

The MPCA has the authority to adopt and has adopted standards for the collection, transportation, storage and disposal of solid waste. These standards relate in part to location. The location standards are concerned primarily with delineating what types of locations are acceptable or unacceptable for solid waste disposal sites. For example, MPCA regulations prohibit solid waste disposal sites within a certain distance of a stream. MPCA permits are required for solid waste disposal sites. Permits are not to be granted for sites in locations which are inconsistent with MPCA regulations. In summary, the MPCA can prevent land from being used for a solid waste site if the characteristics of the location make it susceptible to pollution problems. Under legislation passed in 1974, the MPCA is also authorized to adopt standards for the location of hazardous waste disposal facilities. The MPCA also has permitting authority for hazardous waste facilities.[4]

Finally, the MPCA is empowered to adopt standards setting maximum noise levels. Among other factors the MPCA is to consider in creating these levels is the extent to which noise may interfere with the enjoyment of life or property. By statute the regulations are to reflect the fact that appropriate noise levels may vary according to location.[5]

265

The Agency is made up of nine citizen members appointed by the Governor, with the advice and consent of the Senate. The members are broadly representative of the skills and experience necessary to effectuate a policy of pollution control.

The Agency is organized into three divisions. These are water quality, air quality and solid waste. In addition, the Agency has support sections: public information, legal, and administrative services. There are five regional offices. See Figure 1 for an organization chart of the Minnesota Pollution Control Agency.

3.2.2 Department of Natural Resources

The Department of Natural Resources (DNR) has administrative control over the State's water resources. All public waters, both surface and underground, are subject to DNR control. DNR is charged with developing a general water resources conservation program contemplating the conservation, allocation and development of all such waters.[6]

The Department reports to the Natural Resources Commission. It has a central office and six regional offices. The regional structure is only 3 to 4 years old. The Department is organized into the following divisions:

- Forestry,
- Fish and Wildlife,
- Parks and Recreation,
- Enforcement,
- Waters,
- Minerals.

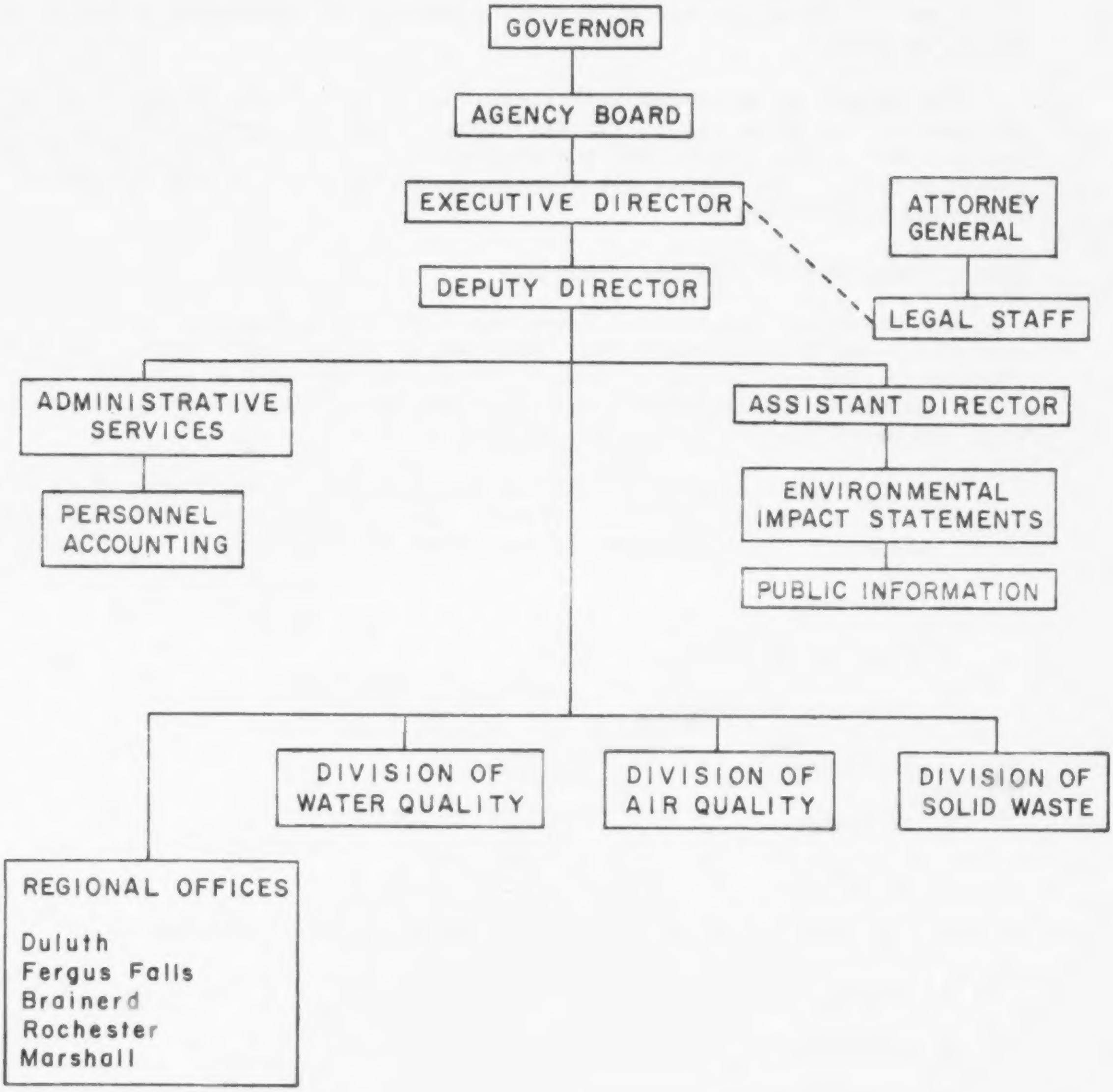
In addition, the Department has the following support sections:

- Legal,
- Planning,
- Administrative Services,
- Field Operation,
- Information and Education.

See Figure 2 for an organizational chart of the Minnesota Department of Natural Resources. Also see Figure 3 -- a map indicating regional division.

FIGURE 1

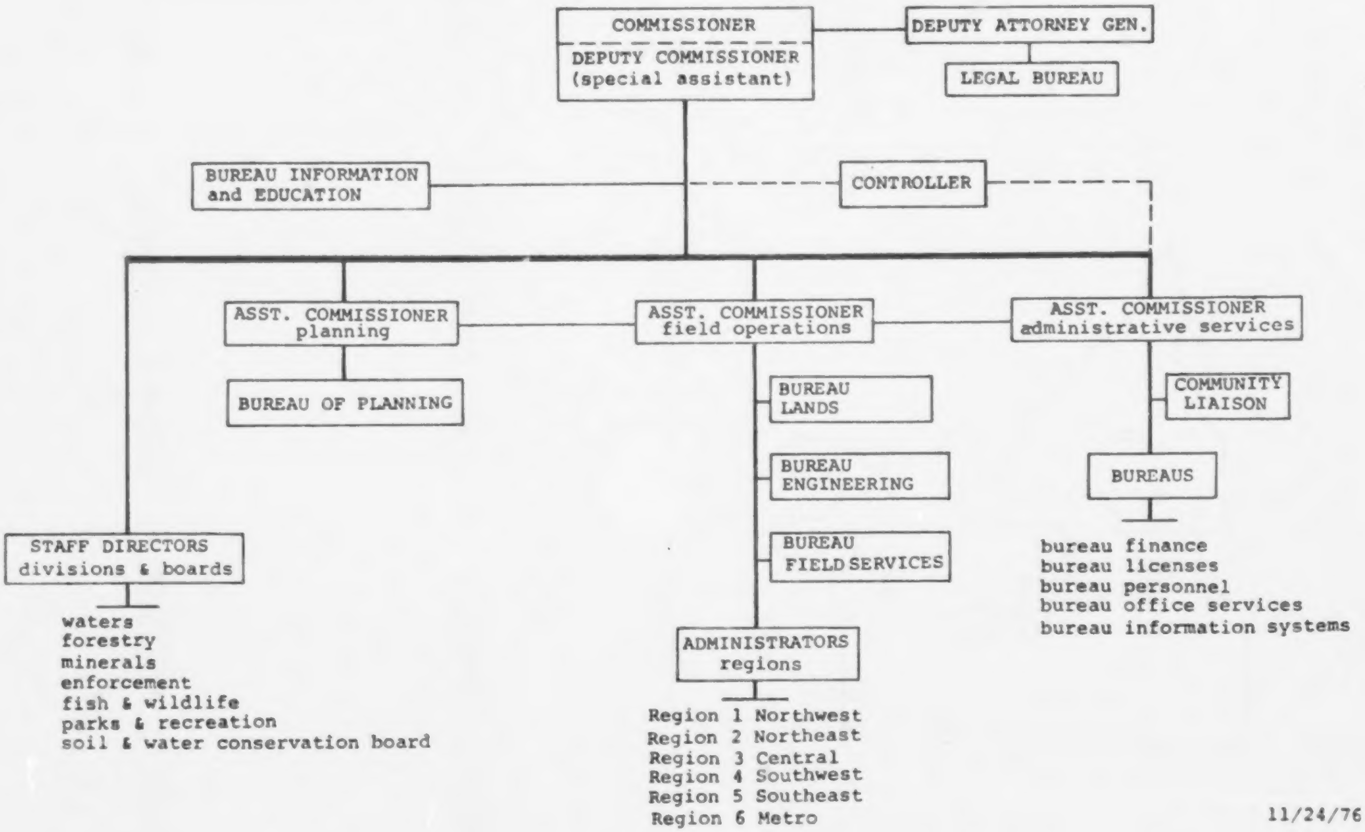
MINNESOTA POLLUTION CONTROL AGENCY


GOVERNOR
AGENCY BOARD
EXECUTIVE DIRECTOR
ATTORNEY GENERAL
DEPUTY DIRECTOR
LEGAL STAFF
ADMINISTRATIVE SERVICES
ASSISTANT DIRECTOR
PERSONNEL ACCOUNTING
ENVIRONMENTAL IMPACT STATEMENTS
PUBLIC INFORMATION
DIVISION OF WATER QUALITY
DIVISION OF AIR QUALITY
DIVISION OF SOLID WASTE
REGIONAL OFFICES
Duluth
Fergus Falls
Brainerd
Rochester
Marshall

267

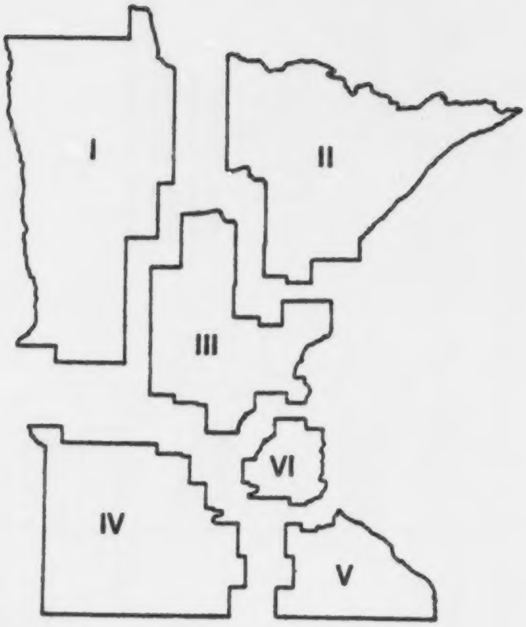
FIGURE 2

Minnesota Department of Natural Resources —— .Organization Chart


COMMISSIONER
DEPUTY COMMISSIONER (special assistant)
DEPUTY ATTORNEY GEN.
LEGAL BUREAU
BUREAU INFORMATION and EDUCATION
CONTROLLER
ASST. COMMISSIONER planning
BUREAU OF PLANNING
ASST. COMMISSIONER field operations
BUREAU LANDS
BUREAU ENGINEERING
BUREAU FIELD SERVICES
ADMINISTRATORS regions
Region 1 Northwest
Region 2 Northeast
Region 3 Central
Region 4 Southwest
Region 5 Southeast
Region 6 Metro
ASST. COMMISSIONER administrative services
COMMUNITY LIAISON
BUREAUS
bureau finance
bureau licenses
bureau personnel
bureau office services
bureau information systems
STAFF DIRECTORS divisions & boards
waters
forestry
minerals
enforcement
fish & wildlife
parks & recreation
soil & water conservation board

11/24/76

FIGURE 3



REGIONAL

ADMINISTRATORS

DNR

REGION I (NORTHWEST)

REGION II (NORTHEAST)

REGION III (CENTRAL)

REGION IV (SOUTHWEST)

REGION V (SOUTHEAST)

REGION VI (METRO)

269

The DNR must issue a permit for appropriation of virtually all water in the State, surface or underground, which gives it an opportunity to exercise significant control over land users who appropriate water. The Commissioner is to be guided by the general water resources conservation program in issuing permits. This program was required by the legislature in 1974 but has never been completed. If the applicant's plans "provide for the most practical use of the waters...and will adequately protect public safety and promote the public welfare,"[7] the permit must be granted; if it "is inadequate, wasteful, dangerous, or impractical, or detrimental to the public interest," it must be rejected.[8]

Permits may be given "subject to such conditions as the Commissioner may find advisable or necessary in the public interest." He may obtain the recommendation of a municipality, town, or watershed district in which the proposed activity is located but is not bound to follow it. The Commissioner's findings of fact and orders are deemed valid and reasonable, and the orders must be affirmed if lawful and reasonable.[9]

In 1969, the DNR was given authority to directly regulate land use for some mining purposes. The 1973 amendments to the Mineland Reclamation Act give the DNR authority to require a plan for the reclamation or restoration of mining areas and as of June 30, 1975, to issue a permit for operation based on this plan. In promulgating regulations for the permit, DNR is directed to consider, on one hand, the environment and wise utilization of land and natural resources and, on the other, the economic and employment effect of the regulation on mine operators and on the area and their effect on future mining and development of mineral resources.[10]

DNR also has direct authority to control certain other specific land uses. No person, public or private, can store gas or liquid (other than water) underground without a permit from DNR. The Commissioner's authority to grant such permits is specifically limited by statute: no permit can be issued unless the storage will be more than 500 feet underground, will not impair any water resources, will serve a substantial portion of the consuming public in the State, and will be subject to certain conditions protecting landowners.[11]

DNR is authorized to grant licenses for telephone and power lines and pipelines to cross State lands and waters. This power could probably be used to control construction and location of such lines in areas where much of the land is State-owned or where there are numerous bodies of water that would be difficult for a line to avoid. Furthermore, and more significantly, before land can be acquired for a pipeline by condemnation, DNR must consider its environmental impact.[12]

The DNR may acquire private land for a number of specific purposes. These include the acquisition of private land for the establishment of scientific and natural areas that have "values inherent in the natural condition" (living museums); habitats for endangered species for game farms or hatcheries; for public hunting grounds and refuges; for parking and camping areas adjacent to public waters; for State forests; for State parks, waysides and trails; for wildlife development programs (with the approval of the county board); for dams and for other water control uses.[13]

As of February 1975, the DNR held fee title to 5,201,623 acres of land. Of this amount, the Division of Lands and Forestry owned 2,997,889 acres within State forest boundaries and an additional 1,581,180 acres of forest land outside of State forest boundaries. The Division of Parks and Recreation owns 145,668 acres in State parks, recreation areas, waysides, monuments, historic sites and trails. The Division of Game and Fish owns 448,618 acres for wildlife purposes and 24,908 for fisheries purposes. The Division of Water, Soils and Minerals holds title to 1,890 acres of mineral lands, while the Division of Law Enforcement and Field Services owns 1,470 acres in public access sites.[14]

The Flood Plain Management Act, enacted in 1969, requires each local governmental unit to adopt flood plain management ordinances, which are to include regulation of land use in the flood plain. The flood plain is the area that may be covered in a large flood -- one that can be expected to occur on an average frequency in the magnitude of the 100-year recurrence interval. A substantial amount of land falls under the Act's purview. Local ordinances must be approved by DNR. DNR is also charged generally with coordinating and evaluating local, State and federal flood plain management activities.[15]

The Shoreland Development Act, also adopted in 1969, requires counties to adopt a shoreland conservation ordinance; if a county fails to do so or if its ordinance does not meet DNR's minimum standards, DNR can adopt an ordinance for the county. DNR is required to promulgate, with approval of MPCA and the Board of Health, model standards and criteria including:

1. The area of a lot and length of water frontage suitable for a building site;
2. The placement of structures in relation to shorelines and roads;
3. The placement and construction of sanitary and waste disposal facilities;
4. Designation of types of land uses;
5. Changes in bottom contours of adjacent public waters;
6. Preservation of natural shoreland through the restriction of land uses;
7. Variances from the minimum standards and criteria;
8. A model ordinance.[16]

The Shoreland Development Act gives the DNR authority to implement these regulations along the shorelands of public waters. This regulatory authority extends 300 feet for streams and rivers and 1,000 feet for lakes.

Chapter 369 extends the provisions of the Shoreland Management Act that previously applied to counties and directs the Commissioner of DNR to promulgate standards for the development of shorelands within incorporated areas as well. Cities were required to adopt ordinances by July 1, 1975, that comply with these standards governing the use of shoreland within 1,000 feet of lakes over 25 acres and within 300 feet of rivers.[17]

3.2.3 Department of Agriculture

The Minnesota Department of Agriculture is the major farm-food regulatory agency in the State. With this obligation, the State Department of Agriculture enforces laws designed to protect the public health and works to prevent fraud and deception in the manufacture and distribution of foods, animal feeds, fertilizers, pesticides, seeds and other items.

The various laws assigned to the Department for enforcement give the Commissioner his basic regulatory powers. In addition, the legislature has given to the Commissioner the power to enact rules, definitions, and standards to explain and clarify the laws, and to cope with changing conditions.[18]

Figure 4 is an organizational chart of the Department of Agriculture.

3.2.4 Environmental Quality Council

The Environmental Quality Council was established to advise the governor, the State legislature and the general public on all environmental issues.

The Council may initiate interdepartmental investigations. The Council is also responsible for reviewing programs of State agencies that significantly affect the environment and coordinate those it determines are interdepartmental in nature and insure the Agency's compliance with State environmental policy.

The Environmental Quality Council reviews environmental regulations and criteria for granting and denying permits by State agencies and resolves conflicts involving State agencies.

All State agencies are required to submit all proposed legislation of major significance to the environment to the Council.

The Council additionally has the power to create task forces to study particularly environmental problems.

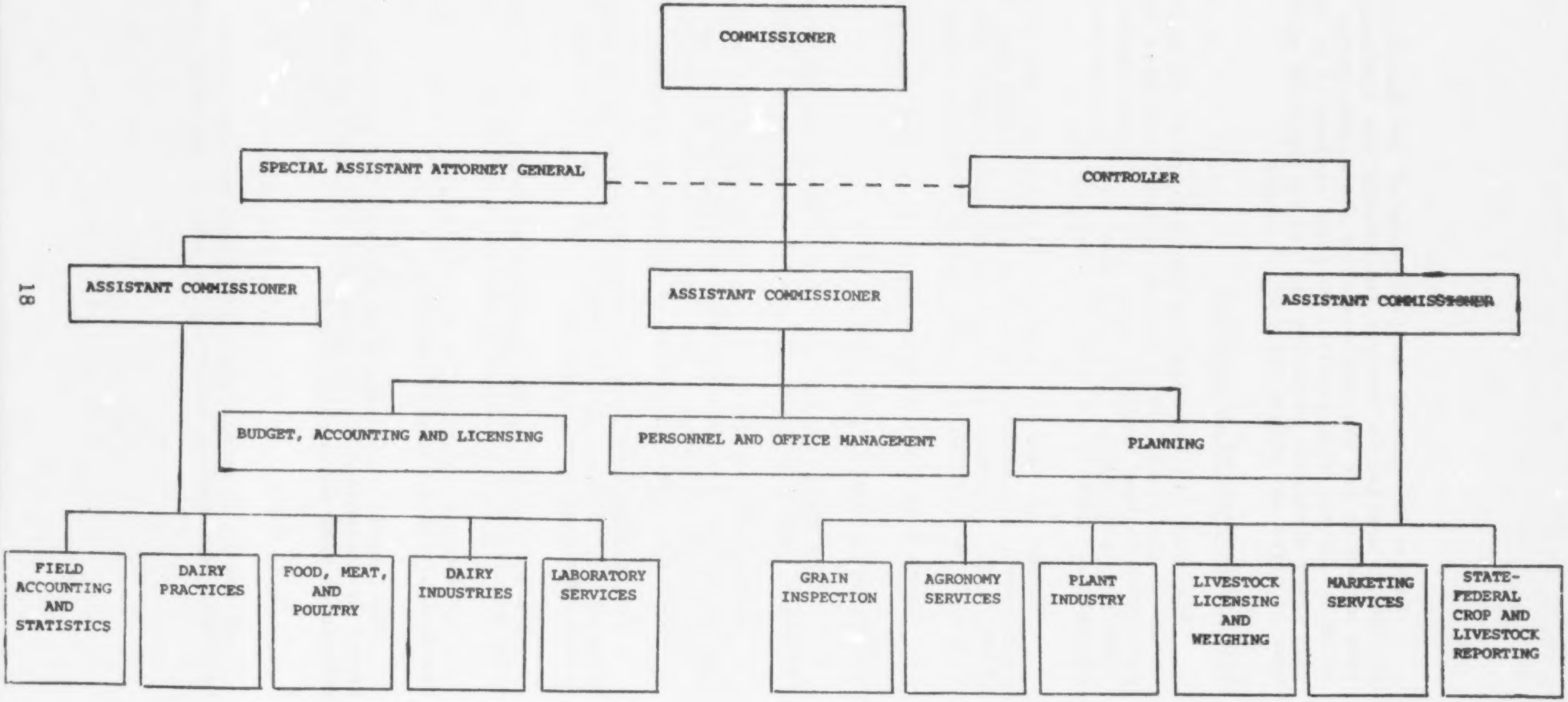
The Council is charged with advising the governor as to the areas that should be designated "critical areas." It may also assist a locality in adopting a plan and regulations.[19]

3.2.5 Local General Purpose Units of Government

At the local level, there are three general purpose units of government that have some form of authority to control non point pollution. They are:

FIGURE 4

ORGANIZATIONAL CHART
DEPARTMENT OF AGRICULTURE
1976


COMMISSIONER
SPECIAL ASSISTANT ATTORNEY GENERAL
CONTROLLER
ASSISTANT COMMISSIONER
ASSISTANT COMMISSIONER
ASSISTANT COMMISSIONER
BUDGET, ACCOUNTING AND LICENSING
PERSONNEL AND OFFICE MANAGEMENT
PLANNING
FIELD ACCOUNTING AND STATISTICS
DAIRY PRACTICES
FOOD, MEAT, AND POULTRY
DAIRY INDUSTRIES
LABORATORY SERVICES
GRAIN INSPECTION
AGRONOMY SERVICES
PLANT INDUSTRY
LIVESTOCK LICENSING AND WEIGHING
MARKETING SERVICES
STATE-FEDERAL CROP AND LIVESTOCK REPORTING

- Municipalities,
- Townships,
- Counties.

3.2.5.1 Municipalities

There are 854 municipalities in Minnesota. According to the 1970 census, three cities -- Minneapolis, St. Paul and Duluth -- are cities of the first class with over 100,000 population. Twenty-four cities are cities of the second class (over 20,000 to 100,000 population); 27 cities are of the third class (over 10,000 to 20,000 population) and 833 cities are cities of the fourth class with 10,000 or less population. In 1970, 66% of the State's municipal governments served populations of fewer than 1,000.[20]

Under Minnesota Statutes Section 462.351-462-364, all of these municipalities have the authority to prepare and adopt comprehensive municipal plans and to implement those plans through a variety of "implementation measures."[21]

1. The authority to plan and adopt implementation measures is voluntary, not mandatory. The number that have adopted plans and regulations is not known.
2. The appointment of a municipal planning agency and a zoning administrator is optional.
3. If the governing body adopts implementation measures, the creation of a board of appeals and adjustments is mandatory.
4. Municipalities may extend zoning regulations and subdivision controls up to two miles beyond their boundaries into unincorporated territory except in towns or counties which have adopted zoning regulations or subdivision controls.[22]

1973 legislation requires municipalities to take certain action regarding shorelands, floodplains, and State designated wild, scenic and recreational rivers or critical areas.[23]

3.2.5.2 Townships

Minnesota contains 1.798 townships. In 1970, 92% of these townships had populations of fewer than 1,000.

The legislative authority which enables townships to plan and adopt building and zoning regulations dates back to 1939. Amendments have been made more recently. Statutory authority is contained in Minnesota Statutes Sections 394.33, 366.10-366.182, 368.01, 368.56-368.58.[24]

Townships or towns, as they are called, are of two types -- urban towns and other towns. The authorities of each are quite different. Urban towns have been granted the same land use authorities by the legislature as municipalities. Other towns require voter approval to plan and zone. As in the case of municipalities, planning and zoning is voluntary. In addition, the appeals board is not required of townships when they adopt regulations to implement the plan. Legislation requires that township regulations must be consistent with and not less restrictive than adopted official controls of the county.[25]

3.2.5.3 Counties

Minnesota has 87 counties. In 1970, about half of the counties contained less than 15,000 people.

The organization and extent of county land use planning and regulatory authority is provided in Minnesota Statutes Section 394-21-394-37. Strong similarities exist between counties and municipalities. The preparation of comprehensive plans and the adoption of official controls are voluntary. When a county board adopts official controls, the creation of the board of adjustment is mandatory. The legislature specified that official controls may be used for a variety of purposes, including sewage disposal, protection of slopes and soils, preservation of wetlands, open space, forests, wildlife habitat, agricultural lands and other uses.

1973 legislation requires certain action from counties relating to shoreland or floodplain programs and the designation by the State of wild, scenic and recreational rivers or critical areas.

In 1973, the Agricultural Extension Service, University of Minnesota, published a report entitled Land Use Controls by Minnesota Counties. Although preliminary and subject to change upon further analysis, the report shows that on March 1, 1973, 59 counties were using countywide zoning ordinances, 52 counties had adopted countywide subdivision control ordinances, and 78 counties had enacted land use controls that brought them into compliance with the requirements of the shoreland management ordinance. In addition, 18 counties had countywide sanitary codes; 12 counties had ordinances to regulate the disposal of solid wastes and 10 counties had adopted other special controls.[27]

At the cutoff date for the survey, nine counties apparently had not yet adopted controls in accordance with the shoreland management program. Four counties -- Chippewa, Lake of the Woods, Ramsey and Traverse -- had not adopted any land use controls. Three counties -- Hennepin, Lake and Pine -- had adopted neither shoreland management nor zoning ordinances but were using some other controls. Houston and Waseca counties were using zoning ordinances that did not yet include the required controls over shoreland areas. Houston County also has a subdivision control ordinance.[28]

275

3.2.6 Special Purpose Districts

There are four special units of government which have the authority to control non point source pollution. They are:

- Soil and Water Conservation Districts,
- Watershed Districts,
- Regional Development Commission,
- Metropolitan Council.

3.2.6.1 Soil and Water Conservation Districts

The entire State is covered by 92 Soil and Water Conservation Districts, which in most cases follow county boundaries. The State Soil and Water Conservation Board, under the Department of Natural Resources, can organize soil and water conservation districts upon petition of occupiers of land in the district and after a hearing and referendum. The districts are organized basically to deal with soil erosion; and to carry out their goals, they are empowered to provide aid for and to conduct erosion control projects, to acquire and dispose of property and, when directed by the county, to undertake various works of improvement. A district can also develop a comprehensive plan for conservation of soil and water resources specifying necessary projects, farming methods, and "changes in land use;" but it is given no power to enforce such a plan.[29]

The governing bodies of the districts consist of five supervisors, three elected by the public and two appointed by the Soil and Water Conservation Board. County boards have the authority to levy an annual tax for such amount as the board determines to be necessary to meet the requirements and obligations of the district. Technical and financial assistance is also provided by the U.S. Department of Agriculture in testing soil and in planning alternative land uses for voluntary acceptance by private property owners.[30]

3.2.6.2 Watershed Districts

Minnesota has 33 watershed districts. The establishment of a watershed district is more complex than for municipal, township or county governments. In this case, citizens elect local officials, the governor and district court judges. The governor in turn appoints the members of the Water Resources Board. The Board then reviews petitions from citizens, municipalities, or counties to establish watershed districts and, if appropriate, establishes the districts, their boundaries and the initial watershed board of managers.[31]

The Watershed Board of Managers appoints employees and advisors to carry out substantial authorities relating to various aspects of water, waste disposal, open space and other land uses. Watershed districts may also determine the benefits derived from their projects and assess public and private lands for these benefits.[32]

276

Appeals to the decisions and actions of the watershed managers can be heard by the Water Resources Board (seldom used) or by the district court.[33]

In the metropolitan area, the Metropolitan Council, appointed by the governor, may review and comment on the proposals of the watershed districts.[34]

3.2.6.3 Regional Development Commissions (RDC)

The formation of regional development commissions (RDCs) was authorized by the legislature in 1969 through Minnesota Statutes Section 462.381-462.397. Thirteen RDCs have been created which cover the entire State with the exception of the 7-county metropolitan area. In this area, the Metropolitan Council has jurisdiction.[35]

The RDCs' members are elected rather than appointed. The RDC members are not elected directly to the commissions but are selected from elected officials in municipal, township and county government as well as school boards and councils of government. Selection is made by other elected officials at these levels. The elected officials, in turn, select citizen members of the commissions who represent the public interests of the region.[36]

The RDCs are primarily planning and coordinating bodies which prepare and adopt comprehensive regional plans encompassing physical, social and economic needs. The commissions also review the plans of units of local government and special purpose districts within the region and review applications for State and federal financial grants. The RDCs do not have any authority to acquire, manage, develop, or regulate the use of land or resources.[37]

Through legislation passed in 1973, regional development commissions have special authority in matters concerning areas of critical concern.[38]

3.2.6.4 Metropolitan Council

The Metropolitan Council is the regional planning body in the 7-county metropolitan area. Its membership consists of 16 members from separate council districts, who are appointed by the governor. The chairman of the Council is also appointed by the governor and is the 17th voting member.[39]

In creating the Metropolitan Council in 1967, the legislature granted the Council certain planning and review responsibilities relating to land use and associated concerns. Some of those responsibilities were revised in 1974 by specific provisions of the Metropolitan Reorganization Act (MRA). The Metropolitan Council Act (MSA 473B), as modified by the MRA, includes the following responsibilities:[40]

1. The Council shall prepare and adopt, after appropriate study and public hearings, a development guide for the metropolitan area consisting of policy statements, goals, standards, programs and maps prescribing guides for an orderly and economic development, both public and private. The guide shall recognize and encompass physical, social or economic needs

277

of the area and those further developments which will have an impact on the entire area including, but not limited to, land use, parks and open space land needs, the necessity for and location of highways, transit facilities, public hospitals, libraries, schools and other public buildings.[41]

The development guide will include long-range comprehensive policy plans for each commission established under the MRA amendments (presently the Metropolitan Waste Control Commission and Metropolitan Transit Commission). When adopted, the policy plans shall be followed by the Council and affected Commissions. The policy plan for each commission includes a statement of the metropolitan needs relating to the function of the Commission and their location, priorities for development and a statement of expenditure.[42]

2. The Council shall review all long-term operation and development comprehensive plans of each independent commission, board or agency within the metropolitan area, if the Council determines it to have an areawide effect, multi-community effect or to have a substantial effect on metropolitan development. If the Council finds that a plan, or any part of the plan, is inconsistent with its development guide or detrimental to the orderly and economic development of the metropolitan area or any part of the area, it may direct that the operation of the plan or such part be indefinitely suspended. An appeal procedure is provided.[43]

3. The Council, in cooperation with other departments and agencies of the State and the University of Minnesota, may develop a center for data collection and storage and accept gifts for the purposes of furnishing information on such subjects as population, land use and governmental finances.[44]

   Where studies have not been otherwise authorized by law, the Council may study the feasibility of programs relating, but not limited to, water supply, refuse disposal, surface water drainage, communication, transportation and other subjects of concern to the peoples of the area, and may institute demonstration projects in connection therewith.

4. The Council shall approve the use of funds made available for land acquisition to local units of government in the Federal Land and Water Conservation Fund (LAWCON), the open space program of HUD and the natural resources account of the State, if the use of those funds conforms with the system of priorities established by law as a part of the comprehensive plan for the development of parks; otherwise it shall disapprove their use.[46]

5. The Council may provide planning assistance to local government units when requested.

6. The Council shall adopt regulations establishing standards and guidelines for determining whether any proposed matter is of metropolitan significance and establish a procedure for the review of all proposed

278

matters required to be considered and reviewed by the Council. The purpose of the regulations is to promote the orderly and economic development, public and private, of the metropolitan area. The Council shall review all proposed matters of metropolitan significance, all grant and loan applications made to the federal or State government for matters of metropolitan significance and all other matters requiring approval by a regional agency.[47]

Each city, town and county in the metropolitan area shall submit to the Council for written comment and recommendations its proposed long-term comprehensive plans, including plans for land use, prior to final local government unit approval.[48]

Each metropolitan commission shall submit to the Council a development program covering the detailed technical planning, engineering, financing, scheduling and other information necessary to the development of the program elements to be performed by the commission in implementing the Council's policy plan.[49]

7. The Council shall engage in a continuous program of research and study on many subjects including air pollution control, acquisition and funding of recreation open space, water pollution control, solid waste management, tax structure, etc., for the metropolitan area. Studies will include recommendations as to the governmental organization, governmental subdivision, or governmental district best suited to discharge the powers recommended.[50]

3.3 LEGISLATIVE FRAMEWORK

The legislative framework for the State of Minnesota, as implemented by the institutional structure previously presented, is developed in a body of law relating to water quality. In addition to describing the laws it is also important to identify the degree and effectiveness of their implementation.

The legislative framework is presented in summary form on Table II, Summary of Legislative Framework, with a summary of the evaluation of current activity being presented in Table III, Summary of Analysis. The following subsections of this discussion present in more detail the legislative framework and the evaluation as summarized in the two tables. Each table is accompanied by a page of notes identifying different symbols that are used on the table and any specific clarifying comments necessary in the presentation of the table.

3.3.1 Urban Areas

3.3.1.1 Site Construction Runoff

Magnitude of the Problem

New construction sites in urban areas can exert a non point source loading of sediments up to 500 times greater per unit area than is evident in agricultural operations. Construction is an extensive land disturbing activity and places urban lands under unstable conditions, resulting in a high loss of topsoil. The problem of construction site runoff in Minnesota has not been determined.[51]

279

MINNESOTA

TABLE II

Summary of Legislation

CHAPTER	LAND USE CATEGORY										IMPLEMENTING RESPONSIBILITY				TYPE OF CONTROL						COMMENTS/IMPLEMENTING AGENCY
	Urban	Agriculture	Liquid/Solid Waste	Transportation	Shoreline Landfill	Extractive Operations	Recreation	Lakes & Riverbanks	Forest	Regulations	State	County	Municipality	Special District	Direct (PC)	Planning (P)	Indirect (OS)	Non-Statutory (NS)	Management (MP)	Fiscal (F)	
Shoreland Management Act 105.485-541					X			X		Yes	X	X	X		X						Department of Natural Resources, Counties, Municipalities
Flood Plain Management Act 104.01-08					X			X		Yes	X	X	X		X						Department of Natural Resources, Counties, Municipalities
Wild and Scenic Rivers Act Chapter 271							X		X	Yes						X	X				Department of Natural Resources
State Forest Management, 89.001-431									X	No	X					X	X		X		Department of Natural Resources
Regional Water Pollution Control 115.15	X	X	X	X	X	X	X	X	X	No	X			X			X				Minnesota Water Pollution Control Agency, Water Pollution Control Advisory Committee, Sanitary Dis.
Minnesota Solid Waste Disposal Regulations			X							Yes	X						X				Minnesota Pollution Control Agency
Minnesota Critical Areas Act	X	X	X	X	X	X	X	X	X	Yes	X					X	X				Minnesota Environmental Quality Council
Minnesota Recycling Law			X							Yes										X	Minnesota Pollution Control Agency
Enabling Legislation Minnesota Pollution Control Agency	X	X	X	X	X	X	X	X	X	Yes	X				X						Minnesota Pollution Control Agency
Regional Sanitary Sewer Districts	X	X	X	X	X	X	X	X	X	Yes				X			X			X	Regional Sanitary Sewer Districts
Drainage, 105.42		X								Yes Pending	X	X					X				DNR, County Boards, District Courts
Mineral Policy and Mineland Reclamation						X				Yes	X						X				Department of Environmental Resources
Environmental Rights Law	X	X	X	X	X	X	X	X	X	Yes					X						District Courts
Environmental Quality Council, Chapter 116C	X	X	X	X	X	X	X	X	X	Yes	X				X	X					Environmental Quality Council
State Environmental Policy	X	X	X	X	X	X	X	X	X	Yes	X				X						Environmental Quality Council
Regulations for the Processing of Feedlot Permits		X								Yes	X	X					X				Counties, Minnesota Pollution Control Agency

280

NOTES -- TABLE II

1. Land Use Categories -- See Chapter 2, for definitions and identification of the land use activities in each category. An X indicates that the land use category is addressed by the Act. It does not indicate the adequacy of authority or degree of implementation. See page reference for discussion.

2. Regulations Adopted -- Have regulations been adopted to implement the legislation? Symbols refer to:

   Yes -- Regulations have been adopted

   No -- Regulations have not been adopted

   NA -- Information not available or in case of Non-Statutory Control, not applicable.

3. Implementing Responsibility -- The key agencies and/or levels of government that have responsibilities in implementing the legislation. Specific agencies, municipalities and/or special districts are identified in the comments section.

4. Type of Control -- See Chapter 2, Section 3, for definitions of each type of control.

5. An X indicates that the category is addressed by the act identified, it does not identify the adequacy or degree of implementation.

MINNESOTA

TABLE III

Summary of Analysis

LAND USE ACTIVITY	Magnitude of the Problem[1]	Current Activity[2]	Staffing[3]	Financing[4]	Likely Future Activity[5]	COMMENTS
Urban						
Site Runoff	M	EP	NI	NI	L	
Stormwater Runoff	UK	NO	NA	NA	TR	
Agriculture						
Pesticides	M	TR	--	--	L,R	Agriculture not a significant
Fertilizers	UK	NO	NA	NA	TR	activity in the Great Lakes
Feedlot Operations	L	IP	--	--	EP	section of the State
Erosion from Farm Practices	L	NO	NI	NI	EP	
Drainage	L	NO	NA	NA	NO	
Liquid, Solid, Deepwell Disposal						
Solid Waste	L	EP	NI	NI	NC	
Liquid Sewage Sludge	L	EP	NI	NI	EP	
Private Sewage Disposal	S	R	NI	NI	EP	
Transportation Corridors						
Highway and Road Runoff	L	NO	NI	NI	NO	Overturn of tankers is problem
Railroad Runoff	L	NO	NI	NI	NO	
Airport Runoff	L	NO	NI	NI	NO	
Utility Rights-of-Way Runoff	L	NO	NI	NI	NO	Spraying on rights-of-way is controversial issue
Shoreland Landfilling						
Land or Construction Excavation	L	EP	NI	NI	NC	
Dredging	M	EP	NI	NI	EP	Deposit of spoil is problem
Extractive Operations						
Pits and Quarries	UK	NO	NI	NI	NO	
Mining	L	NO	NA	NA	NO	Point source, but atmospheric problem
Brines from Oil and Gas	L	NO	NI	NI	NO	No wells in the State
Recreation						
Runoff from Specific Activities	L	NO	NI	NI	NC	
Pesticide Use	M	TR	--	--	L,R	
Private Sewage Disposal	S	R	NI	NI	EP	
Lakeshore and Riverbank Erosion						
Erosion	L	TR	NI	NI	EP	
Forest						
Timber Production	L	IP	NI	NI	NC	
Woodland Grazing	L	NO	NI	NI	NC	
Wildlife Management	L	NO	NI	NI	NC	
Recreation	L	NO	NI	NI	NC	

282

NOTES FOR TABLE III

1. Magnitude of the Problem -- The degree that the land use activity is reported to be a problem and/or perceived to be a problem by local or State officials. Symbols refer to:

   S -- serious

   M -- moderate

   L -- low

   UK -- yet to be determined

   NI -- information not available.

2. Current Activity -- The land use activities where current activities are focused primarily at the State level. Activities of major emphasis are noted with asterisks (I). The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of incentive programs

   EP -- enforcement of control programs

   TR -- technical research is needed to determine the type of controls needed, if any

   NO -- no action

   NA -- not applicable

   NI -- information not available.

3. Staffing - The adequacy of staff assigned to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too many staff resources applied

   0 -- an adequate amount of staff resources applied

   - -- an inadequate amount of staff resources applied

   NA -- not applicable

   NI -- information not available

4. Financing -- The adequacy of the financing appropriated to the implementation of legislation addressing the land use activity. Symbols refer to:

   + -- too much financial assistance

   0 -- adequate financial assistance

   - -- inadequate financial assistance

   NA -- not applicable

   NI -- information not available.

5. Likely Future Activity -- The land use activities where there is likely to be future activity primarily at the State level. The types of activity are:

   L -- development of new or improvements to legislation

   R -- development of or improvements to the regulations

   IP -- implementation of new or improved incentive programs

   EP -- enforcement of new or improvement of control programs

   NO -- no action

   NA -- not applicable

   NI -- information not available.

   NC -- no change

284

Current Activity

There are no laws or regulations strictly directed at controlling non-point source runoff generated from construction sites. However, in situations where specific activities can be shown to cause degradation of surface waters under general water quality standards, abatement of sedimentation can be enforced.[52]

Cities, townships and counties can control site construction activities through their powers to enact and enforce zoning ordinances, subdivision regulations, and building and sanitary codes, and to adopt a development plan. These local units of government are provided these powers through their general enabling legislation and are responsible for managing any and all of the land that lies within their jurisdiction.

Watershed Districts are another legal entity that can control construction site activities within their jurisdiction. A few districts have passed site runoff controls, however, none of these watershed districts are in the basin area.[53]

The Environmental Rights Act and the Environmental Policy Act both provide sources of legislative authority that could control construction site runoff. Under the Environmental Rights Act a citizen is allowed to go to court and establish a prima facia case against some act being contemplated by a governmental agency. If the case is established by a citizen, then the burden of proof rests on the government.

The Environmental Policy Act stipulates that where there is a potential for any significant environmental effects resulting from any major governmental action or from any private action of more than local significance, such action shall be preceded by a detailed environmental impact statement. The Act further requires that wherever a permit is issued, an EIS is required. Although the Environmental Rights Act and the Environmental Policy Act are not directly related to water quality impacts, they do allow a citizen who can identify a non point source water quality problem -- i.e., site runoff -- to attempt to stop any further action.[55]

Evaluation

At the State level, there are no controls on construction site runoff. Local jurisdictions have the authority to pass ordinances controlling site runoff but few have taken the initiative. As a result any actions taken by these entities only indirectly impact pollution caused from site runoff.

There is a desire to adopt a sediment control program. An attempt to do so failed in 1973. It is hoped that such a program will be adopted in the near future.[56]

285

3.3.1.2 Stormwater Runoff

Magnitude of the Problem

Pollution from stormwater runoff normally occurs in one of two ways: (1) where the stormwater is combined with raw sewage in a combined sewer system, and excess flow exceeds the capacity of the treatment plant, resulting in the combined raw sewage and stormwater bypassing the treatment plant and going directly to the receiving stream; or (2) where the stormwater is separated from the sewer system but goes directly to the stream without any kind of treatment. The combined sewer problems has been defined as a point source problem and will not be discussed here. The separated system is currently defined as a non-point pollution problem, since stormwater begins as non-point runoff and only gains point source characteristics after it has been collected in the storm system.[56] Little data is available that adequately describes the severity of this problem in Minnesota.

Current Activity

Stormwater runoff may be controlled by municipalities, towns or regional sanitary sewer districts. These entities have the authority to regulate all public works which include sewers, drains, ditches and sewage disposal works. The regional sanitary sewer districts derive their legal authority for water pollution control from Chapter 115 of the Minnesota Statutes.

There are a few localities which have attempted to address this problem.

Evaluation

The final determination of the methods to solve the stormwater runoff problem has not yet been made. Consequently, no effective controls have been developed. Stormwater runoff is an issue being studied in the 208 Program. At the local level there are institutional structures which could deal with stormwater runoff if effective controls were developed.

3.3.2 Agricultural Areas

3.3.2.1 Pesticides

Magnitude of the Problem

Research indicates that the application of pesticides could have a potentially adverse effect upon animal and plant life in both aquatic and land ecosystems. However, because of the beneficial role pesticides can play in controlling harmful pests, there has been a reluctance to ban pesticides outright.

The Pesticide Task Force on Environmental Quality Control (which was organized to assess the environmental impact of the use of herbicides and pesticides) indicates that in Minnesota some types of pesticide uses (i.e., pasture land applications, home use, county and municipal use, and parks and recreational areas) are not sufficiently monitored and some types of pesticide users have not received sufficient training and education.

286

The Task Force also concludes that State agencies do not have sufficient staff or funding to carry out valid training, education and monitoring programs.

Current Activity

In Minnesota the principal crops are corn, soybeans and small grains. Corn is the principal crop receiving pesticide applications. According to the Minnesota Livestock Reporting Service, over 80% of the insecticide use is on corn.

The Minnesota Department of Agriculture is the lead State agency in pesticide regulation. In 1976 a new act was signed which combined the provisions of the Spraying and Dusting, Economic Poisons and Devices, and the Structural Pesticide Control Law (all statutes in which the Department of Agriculture has principal jurisdiction) into a single document. This act also responds to several provisions of the 1972 amendment to FIFRA, which requires new pesticide planning and management programs at the State level.

More specifically, the Department operates a crop pest control program. The purpose of this program is to detect and suppress new and existing pests. The Department's activities include field surveys, inspection and certification of materials moving interstate and foreign, publication and dissemination of information.

The Department also operates a pesticide control program in urban areas. The purpose of this program is to provide municipalities with technical assistance and approval of pest control programs to insure these programs will be carried out in a safe manner - i.e., Dutch Elm disease and mosquito control.

Another program the Department is involved with is the pesticide and other economic control program. Under this program the Department provides regulatory and technical service to all persons who distribute or otherwise offer for sale and apply pesticides, to insure that all activities in this area are carried on in accordance with legal requirements and in a manner that will reduce hazards to the State's environment.

In order to maintain a supply of pesticides which are labeled in accordance with current safety labeling and directions for use, the Minnesota Department of Agriculture registers each product on an annual basis. Labels submitted with registration applications are reviewed and those products not meeting current requirements and those which are restricted by regulations to "no uses permitted" are rejected. Such products are refused entry to the State trade channels.

A field inspection staff of 16 Agricultural Field Inspectors located throughout the State, with aid from County Agricultural Inspectors, are responsible for checking dealer stocks and removing from sale or use pesticides improperly labeled or restricted.

One supervisor, located in the State Office Building, who divides his time between fertilizer and pesticide programs and one full-time secretary, who also divides her time between fertilizer and pesticide programs, plus part-time clerical help at the peak season beginning in December and continuing through February, are responsible for administration of this phase of pesticide management.

The Minnesota Department of Agriculture has been licensing operators who carry on spraying and dusting operations for hire since 1965. It has been a program that has expanded in numbers each year. All individuals or authorized agents applying pesticides for hire are required to make application for this license annually upon forms and in such manner as the commissioner may prescribe to enable him to determine if the applicant is qualified. The applicant is required to submit the completed form together with the required fee. This fee will vary depending on the number of operators employed by the firm. When the application is received, it is reviewed to see that all necessary information has been supplied. All new applicants and renewal applicants who have not met alternate compliance requirements are furnished examination questions corresponding to the type of pesticide application in which they have indicated they will engage. The type or area of spraying the firm plans on going into determines which test sections they must take and successfully pass.

At the present, the Department offers nine categories for licensing, each with a separate test. Most of the tests are open-book and can be completed by the applicant at home where he is able to use any reference he might have on file. Two test sections are closed-book examinations and are taken under the supervision of and administered by Division personnel.

Approved pesticide workshops are held each year throughout the State conducted by University and Department personnel. These sessions inform applicators of any changes in the law, keep them up-to-date on new chemicals and application techniques and inform them as to pest populations and suspected trends.

The Agricultural Extension Service develops and provides the actual training material while the Department of Agriculture's responsibility lies with approval of training programs and scheduling, providing laws, regulation and information, and in giving necessary examinations.

Applicator equipment is inspected by the Agricultural Field Inspectors and County Agricultural Inspectors to determine if the equipment is operating correctly and to see that the operator is properly licensed. These inspections are submitted to the Division office for review and any follow-up action which might be needed. The main office location for this program is the State Office Building in St. Paul. The program is administered by one full-time supervisor and secretary who also work on other programs within the Department.

All individuals engaged in Structural Pest Control (control of pest population in or within six feet of any structure) for hire in Minnesota shall be licensed by the Minnesota Department of Agriculture. Companies employing these individuals must be registered or licensed by the Department.

Individuals are initially licensed on the basis of passing a written examination administered by Department personnel. The license is for either an apprentice, journeyman, master or fumigator classification depending on the level of written examination passed and previous work experience.

Licenses are issued on a calendar year basis and to renew, the individual must attend an annual Pest Control Operators Short Course, offered by Department and University personnel. These short courses provide information on pest biology and identification, chemical toxicity and usage, new control techniques and changes in State and federal laws and regulations.

Inspections are made at individual firm locations checking records, storage of chemicals, etc. and also at treatment sites where chemicals are applied to control problem pest populations. The application of sodium fluroacetate (1080) is allowed by licensed master pest control operators, but only after they have notified the Department as to location, need and all other particulars. In this way, the Department directly controls the use of a potentially hazardous pesticide.

Structural Pest Operations are conducted throughout the year and thus inspections have no seasonal urgencies. These inspections are carried out by supervisory personnel and the Agricultural Field Inspectors who reside at various locations throughout the State. The main office location for this program is the State Office Building in St. Paul. The program is administered by one full-time supervisor and secretary who also work on other programs within the Department.

Minnesota has enacted legislation which establishes a restricted pesticide program administered by the Department of Agriculture. Under this program, the State has classified nine pesticides as restricted-use materials which can be sold only by licensed dealers. In order to be licensed to distribute restricted-use pesticides, a dealer must complete an application and return it to the Department with the required $20 fee. After receipt of the application, an examination is sent to the applicant. This examination must be taken and passed before issuance of the license.

Each licensed dealer is supplied with forms to record all sales of these restricted materials. At each transaction, the dealer must record the date, customer name, product sold, amount sold, and description of how the material will be used. These reports are submitted to the Department where the information is condensed into an annual report. This report provides an overall picture of how, when and where these restricted pesticides are used in Minnesota.

Inspections are made throughout the year of dealer facilities and records by the Agricultural Field Inspectors and County Agricultural Inspectors. The main office location for this program is the State Office Building in St. Paul. The program is administered by one full-time supervisor and a secretary who also work on other programs within the Department.

Evaluation

According to the Pesticide Task Force, many of the problems associated with pesticides are related to the inconsistencies and particularly the lack of communication existing between various State agencies and local political jurisdictions on pesticide programs, and that these problems are frequently magnified by the inability to control the human element in pesticide usage.

The Pesticide Task Force has issued recommendations on areas of main concern to Minnesota: (1) croplands; (2) pastures; (3) rights-of-way; (4) forests; and (5) waterways, ponds, lakes and reservoirs.

With regard to pesticide usage on croplands the Task Force recommends:

1. That more attention be given to funding of experimental programs intended to optimize and evaluate biological and integrated pest management by appropriate research institutions and that the results of this work be correlated with other effective pest controls to: (a) provide the best possible information, prevention and control in farming practices, in order to reduce waste to pests, (b) eliminate wasted pesticides, and (c) provide the maximum food production;

2. That research be conducted into better diagnostic and predictive methods for crop pest control in order to prevent unnecessary applications of pesticides. They recommend that decisions on crop pest prevention and control remain the jurisdiction of the crop owner. The pesticides to be used shall be limited to those cleared by, and in accordance with, the rules and regulations of appropriate agencies;

3. Studies be conducted to determine the long-term effect of currently used pesticides;

4. That the Minnesota legislature provide funding for the following studies: (a) a study of the productivity of Minnesota farms; (b) a study of the extent of damage to nearby fields and non-agricultural plants resulting from drift or overflight in aerial spraying of croplands plus means to minimize damage; (c) study of insecticides and application procedures to minimize damage to non-target species, and (d) study of methods of insect control to minimize development of insecticide-resistant strains;

5. The establishment, by the governor, of a Select Commission of Scientists to: (a) examine the specific research and development needs of the State of Minnesota in the areas of biological and integrated pest control; (b) examine the amount of present research and funding for such research at the State, regional or federal level; and (c) recommend appropriate

290

improvements in legislation, research facilities, research institutions, funding for research at the State, regional or federal level and implementation of research funds. Such a commission would logically include scientists from institutions outside of Minnesota which have a strong focus of research on integrated or biological pest control.

The Pesticide Task Force recommends that the legislature find a further study of herbicide use and alternative forms of weed control in pastures as it relates to domesticated animals.

On the issue of pesticide use on roads and rights-of-way, the Task Force recommends:

1. The legislature require that vegetation management practices by county, township and municipal governments follow the same criteria for roadside spraying as used by the Minnesota Highway Department, insofar as the practices apply;

2. The legislation banning blanket spraying for roadside management be enacted;

3. That herbicides be used by the Minnesota Highway Department only where the right-of-way lies within 500 feet of a cultivated field or where plants may impair the safety of vehicular traffic and cannot reasonably be controlled by mowing or other mechanical methods;

4. That employees, as well as supervisors of pesticide applicators, who operate spraying equipment on road rights-of-way be licensed applicators in the State of Minnesota.

With regard to pesticide use in forests, the Task Force recommends:

1. Continuing State and federal research in forest development, management and pesticide control, and that the science and information from governmental agencies be readily available to farmers and private forest industries;

2. Private users, industry and governmental agencies use only pesticides cleared and approved by the EPA, Minnesota Department of Agriculture and the Department of Natural Resources;

3. Increased research be conducted into alternative methods of pest control with the goal that pesticide use be minimized.

The Pesticide Task Force's recommendations concerning pesticide use on all types of Minnesota waterways follow:

1. Recommends that effluents entering surface waters of the State from sewage plants be analyzed periodically for the presence of pesticides;

2. Recommends that monitoring programs of the Department of Natural Resources, Pollution Control Agency, and the Department of Agriculture be published monthly in an interagency memorandum;

3. Recommends that the fate of copper sulfate, used as an algicide on Minnesota lakes, be studied by an appropriate qualified agency;

4. Recommends that Minnesota State agencies institute an increased systematic water monitoring program to evaluate pesticide residue levels;

5. Recommends that the Department of Natural Resources use lowest effective rates of EPA and Department of Agriculture approved pesticides when controlling rough fish or other pests in Minnesota waters.

On the issue of the Minnesota Weed Law, the Task Force recommends:

1. That noxious weeds include primary and secondary categories;

2. That the primary category consist only of weeds most difficult to control that present particular economic or health hazards to Minnesota citizens. These should be controlled as determined by the county commissioners, who must comply with Minnesota Department of Agriculture rulings;

3. That the secondary category consist of weeds less difficult to control. These should be controlled where a direct hazard to crops or human or animal health exists as determined by the county commissioners.

Task Force recommendations concerning training and education programs follow:

1. Recommends expanded training and public information programs (e.g., University of Minnesota, the Agricultural Extension Service, Agricultural Extension Agents) which include increased discussion of alternatives to pesticide use as well as the proper use of pesticides.[57]

3.3.2.2 Fertilizers

Magnitude of the Problem

Various nutrients have different effects on water quality.

Agricultural land is estimated to contribute approximately 20% of the total phosphorus loading in the Great Lakes and approximately 30% of that contributed by tributaries to the Great Lakes. Unfortunately, sufficient information is not available to compute the portion of nitrogen loadings contributed from agricultural lands although it may be similar to the amount estimated for phosphorus.

Not only is there a lack of information concerning the exact characteristics of fertilizer and other nutrients but technical solutions which would limit the effect on water quality, such as the time of year and best methods of application, have yet to be determined.[58]

Current Activity and Evaluation

Minnesota has a Fertilizers Control Act. The intent of this legislation is to control the manufacture and distribution of fertilizers and any impacts on water quality are indirect. By law the manufacturer must be licensed and lables and facilities inspected.[59]

The lack of technical information concerning the type of crop, time and usage of fertilizer limits the effect of fertilizers. Better control of fertilizers will come when technical solutions are found. Refer to the section on pesticides.[60]

3.3.2.3 Feedlot Operations

Magnitude of the Problem

There are approximately 100,000 feedlots in Minnesota. It is estimated that 30,000 to 40,000 of these feedlots pose a current or potential threat to surface and groundwater quality. Feedlots present a rather significant problem in Minnesota, however, there are very few in the Great Lakes Basin area.[61]

Current Activity

The Minnesota Pollution Control Agency operates a feedlot program where a permit is required when a new facility is constructed or a current facility is expanded; nearly 4,500 permits have been issued. While over 5,000 will be issued by the end of 1977, this figure is a minimal percentage of all feedlots.[62]

In addition, the FWPCA of 1972 requires that NPDES permits be issued for large feedlot operations. While the final impact of this requirement is not known at present because of litigation, a number of continued feeding operations in Minnesota will also require a NPDES permit because of the magnitude of potential discharge to the waters of the State.[63]

Farmers who upgrade or install new facilities are eligible for an income tax credit from the State of Minnesota. Consideration will be given to additional credits and incentives, including low-interest credits.

Evaluation

The current program is not operating effective. This is due largely to the limited number of staff available to enforce the Act. To date only an inventory of feedlot operations has been completed. The 208 Program will study these staffing and other procedural problems.[64]

The Minnesota Pollution Control Agency intends to focus its efforts primarily on maintaining the permit program and undertaking planning activities in several areas:

1. Assessing areas where MPCA could delegate additional authority to local government for the processing of feedlot permits;

2. Determining the feasibility of a program of State financial assistance to feedlots to encourage improvements.[65]

3.3.2.4 Erosion From Farming Activities

Magnitude of the Problem

Soil erosion from runoff waters across the land can cause sediment to be deposited into streams resulting in a variety of adverse effects to the quality of those streams. Sediment can result both from agricultural runoff as well as construction site runoff. It is the greatest single water pollutant from agricultural activities, while research had indicated that sediment production from eroding construction sites can easily produce ten times the soil loss from cropland.[66] Soil loss from erosion and sedimentation is definitely a problem in a few parts of Minnesota.[67]

Agricultural activities have very little impact on the quality of water in the basin area because of the limited number of such activities that occur there.[68]

Current Activity

Currently there are no laws or regulations specifically directed at sediment control. Agricultural activities that do generate loads of sediment which could adversely affect water quality can be abated under general water quality guidelines and regulations.

Soil and Water Conservation Districts have the ability to control erosion. In Minnesota there are 92 Soil and Water Conservation Districts which, in most cases, follow county boundaries. The Districts are organized basically to deal with soil erosion. They are empowered to provide aid for and to conduct erosion control programs, to acquire and dispose of property, and when directed, undertake various works of improvement.

A District can also develop a comprehensive plan for conservation of soil and water resources specifying necessary projects, farming methods and changes in land use; but is given no power to enforce such a plan. County boards have the authority to levy an annual tax for such amounts as the board determines necessary to meet the requirements and obligations of the Districts.[69]

294

Recently, the State legislature passed a cost-share program. Local units of government also have the authority to pass their own sediment control ordinances.

Evaluation

It should be mandatory that farmers develop and implement an erosion control plan. Funds from the cost-share plan could be used to implement the farmers erosion control plan. The SWCD could oversee the farmers' activities.[70] The State should pursue its attempts to pass a sediment control act.

3.3.2.5 Drainage

Magnitude of the Problem, Current Activity, and Evaluation

Drainage is not considered a water quality problem in Minnesota. In cases where there has been a problem, it is caused by drainage of pesticides and/or fertilizers improperly applied or drains that have not been maintained properly. It is a limited issue in the basin area.[71]

Local units of government have the responsibility and authority to control and regulate drainage areas. They also have a variety of land use powers which allow them to regulate land use and the types of structure built. These powers may indirectly act to prevent deterioration of water quality caused from drainage.

3.3.3 Solid, Liquid and Deepwell Disposal

3.3.3.1 Solid Waste Disposal

Magnitude of the Problem, Current Activity and Evaluation

The Division of Solid Waste of MPCA was formed in 1970 to administer the State's solid waste program. During 1974 and 1975, the Division's program expanded to include resource recovery, source reduction, and hazardous waste management.

The Agency has adopted 32 solid waste regulations. The initial solid waste regulations promulgated in 1970 include SW 1-11 which provides for the adoption of county solid waste management plans, the closing of open dumps, and the operation of approved solid waste disposal facilities. In 1973, amendments to SW 1 and SW 6 strengthened the standards for sanitary landfills to provide increased protection to the environment. Also in 1973 regulation SW 12 was adopted, setting standards for proper closure of open dumps.[72]

In 1974, the legislature directed the Agency's involvement in the areas of resource recovery and hazardous waste management. Regulations for the resource recovery grant-in-aid program (SW 80-83) were adopted in February of

295

1974. Regulations are currently being drafted to set standards for the identification, labeling, classification, storage, collection, transportation, and disposal of hazardous wastes. Depending on the outcome of pending litigation, the Division would administer the Agency's new packaging review program.[73]

The Division faces several problems in managing the State's growing solid waste. Large quantities of hazardous wastes are being generated in Minnesota. The handling and disposal of these dangerous materials is almost completely uncontrolled. The Agency objective is to bring the hazardous substances under a tight control program. Some of this waste is presently being disposed of in environmentally acceptable ways such as incineration, solvent recovery, and in out-of-State land disposal facilities; but much of this material is being discharged into sewers, disposed of illegally at landfills, or simply indiscriminately dumped.[74]

The Agency currently has no control over the generators of thse hazardous materials and thus no way to ensure that generators dispose of their wastes in an environmentally safe manner. In the absence of adequate hazardous waste disposal facilities, the Agency cannot conduct a control program because the generators have no acceptable place to go with their wastes. The few privately-owned, environmentally acceptable facilities are reluctant to expand unless hazardous waste regulations are adopted and, more importantly, are enforced.[75]

Every permitted sanitary landfill is required to have an Agency-approved water quality monitoring system. Problems arise, however, in the uniformity and reliability of sampling and analysis techniques. The Division anticipates adopting guidelines for the proper collection of water quality samples. A quality control program for analysis and laboratory procedures is also necessary.[76]

Resource recovery facilities require reliable and usually a large volume of solid waste for proper operation and in order to offset their high capital investment. There is presently no mechanism to guarantee that a resource recovery facility will be able to obtain the necessary volume of solid waste or to require haulers to deliver solid waste to established resource recovery facilities, especially if haulers can demonstrate that in the current market, it is financially advantageous to go to a sanitary landfill rather than to a resource recovery facility. There must be an orderly and acceptable transition from the system which currently prevails to one which encourages the establishment and maintenance of resource recovery facilities. In this regard, consideration has been given in the metropolitan area to a districting plan whereby haulers would be assigned specific solid waste facilities.[77]

The Division is involved in several activities in solid waste management. A Statewide dump survey was conducted from 1970 to 1973. The survey found that approximately 1200 open dumps existed in Minnesota in 1972.[78]

296

A State solid waste management plan was completed in 1972, followed by completion of 87 county solid waste management plans between 1971 and 1974. Resource recovery planning began with the passage of Minnesota Statute 116F in 1973 -- the Recycling and Solid Waste Act. This bill initiated the Agency's program in source reduction, including packaging regulations.[79]

A solid waste disposal facility permit issuance program has existed in the Division since the spring of 1970. In the case of a sanitary landfill permit application, landfill site design plans, a written operating and engineering report, a hydrogeological study of the site, and a design of a water monitoring system are reviewed by division technical staff before a recommendation for permit issuance or denial is made to the Agency Board. Only applications for facilities consistent with the approved county solid waste management plan are reviewed. Once a permit is issued for a sanitary landfill, the site cannot begin operation until it is certified by a registered engineer that the site has been constructed in accordance with the approved site plans and that a water monitoring system is operational.[80]

The Division also permits solid waste transfer stations, demolition waste landfills, other special waste landfills (such as power plant fly ash disposal facilities), composting facilities, livestock feedlot operations and resource recovery facilities.[81]

State solid waste regulations require that all permitted sanitary landfills have an approved water monitoring system. Each sanitary landfill permittee is responsible for seeing that quarterly water quality samples are taken at the landfill site, analyzed for specified parameters and that the results of these analyses are forwarded promptly to the Agency for review. Water samples are monitored for any significant change in selected leachate indicators and specific conductance. About 80% of the permitted sanitary landfills in the State have operational groundwater monitoring systems which are designed to measure the quality of groundwater "upstream" and "downstream" from the disposal areas. The remaining sites are under review.[82]

Additional facility surveillance is achieved through review of monthly operational reports submitted by the permittee to the Agency.

The Division has both civil and criminal legal remedies available to insure compliance with State solid waste regulations. Staff has formalized an enforcement procedure which must be adhered to in bringing any violation of solid waste regulations and requirements to the attention of the State Attorney General's Office. This enforcement procedure insures that the Agency first exhausts all its administrative remedies and provides the alleged violator sufficient opportunity to comply prior to seeking other remedies. Staff enforcement procedures consist of a series of three documented facility inspections by Agency regional staff with follow-up meetings, with the third on-site inspection and meeting having Agency central office personnel present to discuss compliance alternatives; a fourth documented regional inspection; and, if all else fails, the staff has the option to bring the matter to the Agency Board in the form of an Order to Show Cause to the alleged violator. The Agency Board may authorize a public hearing on the matter. The Board then acts upon the findings of that hearing. The Board may authorize staff to proceed with legal action or to pursue further administrative action in the form of a compliance stipulation.[83]

297

Minnesota Statutes 1973, Chapter 116F, authorized establishment of a Resource Recovery Grant-in-Aid program. The grant-in-aid may not exceed 50% of the total costs of eligible resource recovery projects. Minnesota Pollution Control Agency Regulations SW 80-83 govern eligibility criteria and application procedures for administration of these grants-in-aid. The legislature, in establishing the program, encouraged both the reduction of the amount and type of material entering the solid waste stream and the reuse and recycling of material.[84]

3.3.3.2 Liquid Sewage Sludge

Magnitude of the Problem

The treatment of municipal or industrial wastes produces a by-product, or sludge. Past experience and recent research efforts have demonstrated that where proper restraints and management are exercised, many of these sludges can be applied to the land with little impact on the environment or public health. However, it is also apparent that without proper or adequate management, land application of sludges can promote any or all of the following problems: surface and/or groundwater pollution; excessive accumulation of heavy metals, persistent organics or salts in the soil; pathogen contamina- of food and water resources; and aesthetic degradation.[85]

Sludge disposal is generally not considered a problem in Minnesota. There are some specific areas experiencing problems.[86]

Current Activity and Evaluation

MPCA promulgated guidelines that are intended to aid municipal officials, engineers, and plant operators in implementing acceptable sludge disposal facilities and practices and to provide land managers with recommendations concerning site management and usage. The guidelines also provide Agency staff with criteria to aid in the review and approval of land application projects. These guidelines limit sludge application rates to levels consistent with fertilization and soil conditioning.[87]

Guidelines are being developed to control land application of water treatment sludges, industrial waste sludges, incinerator ashes, and septic tank pumpage. The primary emphasis of both set of guidelines is to minimize the potential problems associated with land application.[88]

3.3.3:3 Private Sewage Disposal

Magnitude of the Problem

Approximately 300,000 septic tank systems have been installed serving the one-third of the State's population outside of metropolitan areas. A diversity of water quality problems in portions of Minnesota have resulted. Both surface and groundwater resources are impacted by the poor location or improper operation of septic tanks, especially in lake regions in central and northern Minnesota.[89]

A wide range of county programs and ordinances attempt to control the location of individual sewage treatment systems. A lack of uniform enforcement has resulted. Some counties have very good programs with excellent administration; some have no ordinance or no trained personnel.[90]

Current Activity and Evaluation

Common practices in some areas include straight pipes from septic tanks to lakes, rivers or ditches. The two most serious situations are in shoreland areas and in outlying areas of urban development.

In outlying urban development, and even in some smaller cities, septic tank systems are often poorly installed in areas with unsatisfactory soil or topography. This may result in degradation of the groundwater by sewage. In one metropolitan area, 60% of the wells were contaminated by septic tank seepage. Some septic systems fail by overflow or by backing up into homes. This leads to a demand either for sewer extensions or for a new sewer system and treatment plant. Frequently a county may have a very good program but have no jurisdiction to require the proper installation of septic tanks in a township or city.[91]

In lakeshore areas the lack of central treatment plant results in the widespread use of septic tanks in places where the soil and topography are not suitable. Nutrients and other pollutants soon contaminate the lake. A mechanism to control the location, construction and use of septic tanks in these areas already exists -- the Shoreland Management Act. This statute requires that all new and existing systems be brought up to the standards of the Department of Health and the MPCA. While this program has been very successful in controlling the location, construction, and use of individual systems on new lots and developments, there is a problem on the older, existing lots which may have an inadequate septic tank or improper soil.[92]

Most local codes contain only information on how to locate and construct a septic tank system where the site and soil are adequate. If good soil does not exist, or if the lot is too small, the only alternative currently available is a holding tank. Homeowners shy away from holding tanks because they become very expensive to operate. Local zoning administrators are fearful of allowing the installation of holding tanks because of repeated instances of illegal pumping, by homeowners, onto laws or into ditches and lakes when the cost of having the tank pumped becomes unbearable.[93]

The MPCA staff is working with a 46-member Citizens Advisory Committee in the development of Statewide, technical standards governing location, construction and use of individual systems.[94]

These Agency standards are intended to provide uniformity by establishing minimum Statewide guidelines for the installation of individual disposal systems. The standards are also designed to provide alternative systems which can be used in areas where the traditional septic tank system will not function properly.[95]

The application of these standards to the estimated 10,000 septic tank systems installed in Minnesota each year will be an important area of involvement for the MPCA the next several years.[96]

3.3.4 Transportation

3.3.4.1 Transportation Corridors

Magnitude of the Problem

Transportation affects water quality through runoffs to surface water from highways and airports, oils and salts leaching into adjacent soils, herbicidal applications along roadside and railroad sites, and accidental spillage of materials. Certain forms of solid waste such as litter or debris are also found near highways and railroads, but nutrient loading is seldom an important runoff from transportation.[97] Minnesota is considered to have a low level problem with regard to non-point pollution impacts of water quality resulting from transportation systems.[98]

Current Activity and Evaluation

At the State level, the general regulations controlling pesticides, sedimentation and herbicides are the only requirements that apply to non-point source aspects of highways, railways and airports. The sanding of highways creates an estimated 15 cubic feet of sand getting into a stream per mile of associated roadway. Salting of highways is another problem. Salting is controlled by a statute which applies to localities and requires the use of salt on curves, hills and bridges. DOT has done an excellent job of implementing the statute, but enforcement is spotty. There is no working agreement between the MPCA and Minnesota DOT to control runoff from the highways in the State.[99]

All State roads and county roads which receive federal funding provide for control of runoff and erosion set by DOT specifications.

3.3.5 Extractive Operations

3.3.5.1 Mining

Magnitute of the Problem

In general, mining operations are not considered to cause serious water quality problems.

Current Activity and Evaluation

The Department of Natural Resources is charged with the development and administration of the State's mineland reclamation program. The 1973 Mineland Reclamation Act requires the reclamation of all currently active and any future metallic mining operations in the State. A total of 22 existing operations must comply under this law and obtain a permit to mine -- once rules and regulations have been established. Each permit application must include a mine reclamation plan for the review and approval of this unit.[100]

300

This program had not previously been funded, but in 1976 the legislature appropriated funds to the DNR so that the rules and regulations for mineland reclamation could be drafted and hopefully implemented by the end of FY 1977. Using these funds, the DNR hired a reclamation staff in order to complete the draft of these rules and regulations, prepare them for public hearing and initiate a program for administering the regulation.[101]

DNR is continuing the existing mineland clean-up program for removing abandoned and dangerous foundations and structures left by past mining operations. It is also designing a mine model to define and demonstrate reclamation procedures, and is initiating the development of a Mesabi Range Land Use Plan, in order to serve as a basis for permit review and to coordinate activities of the mining companies with the general public, to promote land use diversity and compatibility. An inventory of historical sites associated with the Mesabi Range is also being conducted in connection with this land use study.[102]

Under the Registration of Severed Minerals Act, as amended in 1973, every owner of an interest in minerals owned separately from the surface of the property, was required to register such interest before January 1, 1975, or such interested was forfeited to the State in trust for the local taxing district.[103]

The Department of Natural Resources is also responsible for the administration of approximately 10,000,000 acres of State-owned mineral rights located mostly in the northern part of the State. These include School and University Trust Fund, Acquired and Tax Forfeited mineral rights.[104]

The DNR is responsible for implementing and regulating the exploration and development of these minerals rights in order to provide equitable rental and royalty income for the State's Trust Funds, General Revenue Fund, and local taxing districts; and to help provide for a long-lasting, stable economy for the region and the State.[105]

Under the Minnesota State mineral laws (M.S., Chapter 93), these mineral rights are not sold, but State lands believed to have mineral potential may be leased at public sale, or in certain cases, by negotiation; and royalty is paid to the State on each ton of ore mined. These mineral leases also provide for annual minimum rental or royalty when no ore is mined.

The Department provides for the exploration and leasing of these mineral lands, economic and environmental review, royalty accounting, and, primarily through its field office in the iron mining district at Hibbing, engineering and inspection support to insure permit and lease compliance, evaluation of mineral potential, metallurgic research and testing, and cartographic and chemical laboratory support.[106]

Due to the intense interest in the State's mineral resources, both as to evaluation of the mineral potential, their development, and the environmental concerns regarding their development, a great deal of the Division's time must be devoted to the handling of public inquiries on mineral resources. In addition to its statutory responsibilities, the unit must also provide technical support to other State agencies, its federal counterparts and to the mineral potential counties.[107]

Iron ore and taconite from the Mesabi Range have dominated the mining scene in Minnesota for some 90 years, and will probably continue to do so for 200 or more years to come. The State, through its Trust Fund and Tax Forfeited mineral ownership, owns approximately 19,600 acres on the Mesabi iron formation, or approximately 18½% of the total.[108]

During Fiscal Years 1976-1977, this unit administered 154 existing iron ore and taconite leases, covering more than 13,000 acres of the iron formation. Three natural iron ore mining leases were negotiated in 1976 and approved by the State Executive Council.[109]

During FY 1976, six taconite plants were in operation and produced approximately 41½ million tons of taconite pellets. During this same period three of these existing operations were in the process of being expanded, and two new taconite plants were in the process of being constructed, representing a 50% increase in taconite pellet capacity and an additional investment of approximately $1 billion.[110] A substantial portion of this development will be completed during this biennium, and the remainder during the forthcoming biennium. When this expansion and new construction are completed, Minnesota will have eight taconite operations, with a capacity of 65,000,000 tons of taconite pellets per year. State-owned taconite represents a substantial portion of the reserves of all these operations.[111]

In addition to its Iron Ranges, Minnesota has several other formations that currently are receiving a great deal of attention for their metallic mineral potential. Since 1966 the Division has had an active exploration leasing program in the Duluth Gabbro complex, which involved portions of St. Louis, Lake, and Cook counties in northeastern Minnesota. Exploration activities in that area have resulted in announced finds of copper-nickel mineralization, which appear to have potential for possible development. Potential ore bodies are primarily copper-nickel sulphide deposits, associated in some instances with cobalt, gold, platinum or other valuable minerals. These minerals are generally found finely disseminated in the Gabbro, forming large tonnages of low grade deposits. Substantial occurrences of titanium-bearing minerals have also been found in this Gabbro complex.[112]

The significance of these copper-nickel deposits in the Gabbro is of major importance to the State, considering the estimated mining life (based on the limited exploration to date) of about 150 to 200 years, calculated on a reasonable rate of extraction of 27 million tons or ore per year. Much of these ore reserves are held by the exploration companies under State leases. As of July 1, 1976, there were 94 copper-nickel leases in effect in the Duluth Gabbro complex, covering some 38,000 acres.[113]

In 1967 interest also developed in Minnesota's Greenstone formations, which extend extensively throughout the north half of the State, and which are the host rock of much of the mineral wealth of the adjoining Canadian provinces. The interest here is for base and precious minerals such as zinc, lead, copper, gold, silver, etc. In Canada these Greenstone formations are typified by high grade, but relatively small deposits. Often, however, these deposits can represent very significant mineral values.[114]

To date the DNR has issued a total of 699 exploration leases, covering more than 300,000 acres, in the Greenstone formation. Greenstone exploration, however, can best be described as "looking for a needle in a hay stack;" and since the DNR has been unable to conduct any copper-nickel lease sales since 1973, only five leases remain in the Greenstone areas, covering some 1,700 acres.[115] There is currently intense interest in renewed exploration activity in both the Greenstone and Duluth Gabbro areas, and numerous requests have been made of the Division for a continuation of these public lease sales. If the State Executive Council concurs, the Division will conduct at least a limited copper-nickel lease sale during the latter part of this biennium.[116]

During FY 1976 approximately 74,000 feet of iron ore, taconite, and copper-nickel exploration drilling was conducted on State-owned property. This exploration activity has been closely monitored by the Division's Hibbing field office, and a quarter portion of all drill core is obtained by the Division and placed on file in its drill core library. If a copper-nickel lease sale is held during the early part of 1977, it is expected that the amount of exploration drilling will increase significantly.[117]

In addition to its administrative responsibilities in connection with copper-nickel exploration on State-owned lands, the Division has also been heavily involved with the regional Copper-Nickel Study being conducted through the Environmental Quality Council. This unit has supplied much of the input into the leaching studies and the aquatic biology monitoring programs under this study.[118]

The Minesite Study, a computer based environmental review process developed by the Environment Section of this Division, is also being developed for on-going copper-nickel planning and could be incorporated into the EQC study.[119]

The study was initiated in 1973 by the Division of Minerals. Interdisciplinary techniques are used to evaluate environmental values and resource development potential. These techniques can then be used with existing economic and social systems to develop resource management plans.

Minesite has three important objectives:

1. Determine natural resource management capability;

2. Assess environmentally sensitive areas;

3. Establish a mineral resource planning program. This includes an evaluation of mineral potential, and locates a series of mineral facility site alternatives. These evaluations will be used for land use management and evaluation of specific proposed projects.

The techniques and systems being developed will also be useful in land use and policy/management planning on the Iron Range, in the peat resource areas, and for planning in the copper-nickel areas in the Greenstone belts across northern Minnesota.[120]

303

3.3.5.2 Brines from Oil and Gas

Magnitude of the Problem, Current Activity and Evaluation

There are no oil or gas wells in the State. Consequently, further investigations in this area were unnecessary.[121]

3.3.6 Shoreland Filling

Magnitude of the Problem

Two major problems result from dredging problems: resuspension of sediments at the dredge cutterhead and disposal of the dredge material. While the resuspension of sediments is a problem at any dredging site, it is a major concern in areas containing nutrients, polluted sediments or a high percentage of fine material that pollutants are most likely to adhere to. Resuspension of such sediments could reintroduce toxic substances, such as PCBs, into the food chain. According to MPCA dredge material should be contained in a confined on-land disposal facility and any discharge must meet appropriate effluent limitations and water quality standards. Improper disposal of dredged material has had an adverse effect upon fish and wildlife in the vicinity of dredging operations and has closed off entrances to backwaters, hastening the eutrophication of these areas.

Current Activity and Evaluation

Dredging and filling operations are currently regulated by a Corps of Engineers permit program. The MPCA is required under Section 401 of the FWPCA of 1972 to provide a certification that the proposed activity will not violate water quality limitations or effluent standards before a Corps permit can be issued for the proposed activity. The Corps permit program once was applicable only to navigable waters of the United States, but subsequent to July 25, 1975 the program has been extended to virtually all waters of the United States.[122]

Under the provisions of the Corps regulation governing the administration of their permit program, federal agencies are not required to obtain a Minnesota water quality certification, but they are required to comply with the substantive State, interstate and local water quality standards and effluent limitations. The Corps contends that they do not have to meet these State requirements. The State filed in U.S. District Court in April 1975 for a declaratory judgement to require that the Corps comply with the Minnesota Statutes and Regulations which relate to maintenance of the quality of the water in the lakes and rivers in Minnesota. The U.S. District Court has ruled that the Corps of Engineers must comply with these Statutes and Regulations.[123]

3.3.7 Recreation

Magnitude of the Problem

There has been no significant degradation of land and adjacent waters caused from recreational land use. The problems that do exist are localized and related to specific types of activities.

Current Activity and Evaluation

The DNR is responsible for implementing the Outdoor Recreation Act of 1975. During fiscal years 1976-1977 the Parks and Recreation Division prepared detailed resource management plans for 20 major recreational units. These plans will determine the units' best recreational uses and how to best manage their resources. The procedure in preparing these plans has required the staff to have at least two public meetings per plan, and final public informational hearing at their completion.[125]

The staff has also completed the requirement of classifying each of the units, and has prepared a summary of each decision for legislative review. Rules and regulations have been established for the administration of Natural and Recreational State parks. The parks planning staff has also been responsible for preparing a State Registry that lists the name, location, size and administration of all units within the State Recreation System. This registry is now complete and has been computerized for convenience and flexibility.[126]

The North Shore Systems Study is a recreation study financed with matching funds from the Coastal Zone Management Program. The purpose of the recreation system study is first, to assess the recreation potential (opportunities and limitations) of certain local, State, federal and private lands on the North Shore; second, to tie together existing and proposed recreational units through a North Shore recreation system plan which can easily be incorporated into the Coastal Zone Management Program; and third, to provide a framework for preparing individual master plans for units of the State Outdoor Recreation System located in the Coastal Zone.[127]

The Division is also responsible for administering the wild and scenic rivers program. Under this program rivers are designated as wild and scenic rivers. Management plans are then prepared for each river.

The DNR's Trails Section currently has two programs directly related to trail implementation on a Statewide basis. These are the Corridor Trails Program and the Grants-In-Aid Program. In the 1976-1977 biennium, the combination of the two has resulted in the Legislative authorization and/or development of 12 multiple-use corridor trails totalling more than 1,200 miles, and 3,500 miles of Grants-In-Aid trail projects. The latter has expanded to include approximately 66 of Minnesota's 87 counties.[128]

Existing laws and standards regulating sedimentation, pesticides, and herbicides can also provide controls.

With regard to pesticide use, refer to the section on agricultural areas. The same restrictions on licensing, use and application applies to pesticide use in recreational areas. With regard to private sewage disposal the same authorities and restrictions apply in recreational areas as found in the section on solid, liquid, deepwell disposal. The development of regulations regarding recreational activities does not seem to be a high priority issue compared to other land use activities affecting water quality.

3.3.8 Lakeshore and Riverbank Erosion

Magnitude of the Problem, Current Activity and Evaluation

In Minnesota the Shoreland Management Act provides a means for municipalities and counties to control erosion.

Under the Act, the Commissioner of the Department of Natural Resources (DNR) is empowered to promulgate standards and criteria regarding land use, subdivision, and development of shoreland areas and requires local governments to adopt zoning ordinances consistent with the standards. "Shoreland" is defined as land within 1,000 feet of the normal high water mark of a lake and with 300 feet of a river or stream or the landward side of the floodplain of such river or stream, whichever is greater. The areas to be covered in the standards and criteria include, but are not limited to the following:[129]

1. The area of a lot and length of water frontage suitable for a building site;
2. The placement of structures in relation to shorelines and roads;
3. The placement and construction of sanitary and waste disposal facilities;
4. Designation of types of land uses;
5. Changes in bottom contours of adjacent public waters;
6. Preservation of natural shorelands through the restriction of land uses;
7. Variances from the minimum standards and criteria.

Ordinances must be submitted to the Commissioner by local governments for review. In the event the Commissioner finds an ordinance inconsistent with the promulgated criteria, he shall adopt a complying ordinance appropriate for the county or city. Every county in the coastal zone boundary currently has a Shoreland Zoning Ordinance.[130]

The Shoreland Management Act has no provision for

> municipal planning and land use controls for land other than shoreland in the vicinity of shoreland shall be, to the maximum extent practical, compatible with planning and land use controls for shoreland.... Minnesota Statutes, Section 105.485, Subd. 7.

This appears to create an enforceable standard to require consistency in the coastal zone area within municipalities beyond the 1,300 foot shoreland area, but no comparable standard for land use beyond the defined shoreland area in unincorporated jurisdictions is provided.[131]

With respect to a systematic failure by a county or municipality in enforcing the shoreland standards, several options are available. First, the DNR or the lead agency, the State Planning Agency, can intervene in selected local zoning proceedings pursuant to the Environmental Rights Act, to attempt to influence the outcome in that specific case. Second, either State agency could seek judicial review of the reasonableness of any variance granted by the local governmental unit or under the Rights Act's feasible and prudent alternative language. Third, selected variance applications would give rise to environmental impact statement review if they resulted in "significant impact on the environment."[132]

During FY 1976, 18 cities and counties adopted State approved flood plain ordinances. A total of 75 Minnesota cities establishes initial eligibility for the National Flood Insurance Program, in compliance with federal regulations and Minnesota Statutes 104.08. Federal agencies completed three flood plain information reports, covering portions of a total of seven communities. Flood insurance studies were initiated in 40 cities and counties to define floodways and flood plains (a total of 103 studies are now underway).[133]

Other projects during the year included the development of a standard format for technical appendices for flood plain information reports in conjunction with the Corps of Engineers. Drafts of a Flood Proofing Administrators Manual, done in cooperation with the Corps of Engineers and the State Building Code Division, and a Manual on Public Services Activities of the U.S. Army Corps of Engineers were also completed, and are scheduled for publication in FY 1977.[134]

The Critical Areas Act operates in the same manner as the Shoreland Management Act. Standards and criteria are developed by a State agency, and then local counties and municipalities must adopt zoning ordinances and land use plans consistent with the promulgated cirteria and guidelines. If the plans are not adopted or, if after review, they are found inconsistent, the State agency may promulgate regulations which the local governmental unit must enforce. The Critical Areas Act differs from the Shoreland Management Act in that during the interim between promulgation of criteria and the adoption of plans, the Critical Areas Act allows State regulation of all specific development decisions.[135]

After local plans are adopted, Critical Areas, again like Shoreland Management provides for no State administrative review of each specific local land use decision, however, it does provide:

> If plans and regulations for an area of critical concern have become effective under the provisions of Section 116.07, the local unit of government shall permit development only in accordance with those plans and regulations. Minnesota Statutes Section 116G.12, Subd. 3 (Emphasis supplied).

This would allow the State adopted criteria and standards to serve as a test for local government in granting variances and conditional uses.[136]

More important, the Critical Areas Act, unlike Shoreland Management, provides for a direct legal course of action by the EQB to mandate "proper enforcement of the plans and regulations," if the "administration of the local plans and regulations are inadequate to protect the State or regional interest." Minnesota Statutes Section 116.09, Subd. 4. This direct authority to sue to require consistency would strengthen the hand of the State in challenging a systematic failure to implement the CZM plan.[137]

The Critical Areas Act provides for State grants to pay the "nonfederal cost of preparing and adopting plans and regulations for areas of concern." Minnesota Statutes Section 116.14. A critical area designation is effective for only 3 years, unless ratified by the applicable regional development commission or the State legislature.[138]

Minnesota has a typical subdivided land sales act the fundamental purpose of which is to require prior registration of large subdivisions and full and complete disclosure to prospective buyers. It is, however, unique in that the Commissioner of Securities can prevent sale of subdivided land which fails to conform to environmental standards.

The EQB, in implementing the coastal zone management plan, can promulgate as an environmental standard for any subdivision within the coastal zone a requirement that the subdivision comply with the land and water use controls of the Plan. Then, with respect to any regulated subdivision, there would be a direct State review of development and a requirement of plan consistency. This, in most cases, is the only State permit which will regulate residential housing development.[139]

The value of the Subdivided Land Sales Act as a regulatory device in the coastal zone is limited by the Act's exemption of small projects. Fewer than ten lot subdivisions which are offered in any period of 12 months are absolutely exempt. Offers of 50 lots within 12 months are exempt unless the Commissioner of Securities specifically limits this exemption by rule or order. Similarly, lands in subdivisions located in proximity to cities of various sizes are exempted, but again, the Commissioner may revoke or condition this exemption.[140]

The Minnesota Environmental Policy Act (MEPA) is the fundamental environmental law of the State. It provides policies to guide actions affecting the environment, as well as the requirement that an environmental impact statement (EIS) be prepared when an action involving a governmental entity (either directly or in terms of a permit) has "potential for significant environmental effect." Minnesota Statutes Section 116D.04, Subd. 1.[141]

Two policies established in the Act relate specifically to land use and the protection of the coastal zone.

> (f) develop and implement land use and environmental policies, plans, and standards for the State as a whole and major regions thereof through a coordinated program of planning and land use control;
>
> (g) define, designate, and protect environmentally sensitive areas. Minnesota Statutes Section 116D.02, Subd. 2(f), (g).

Under Minnesota Statutes Section 116D.04, an environmental impact statement is required for any "major (state or local) governmental action," (Minnesota Regulations MEQC 22(L), having "potential for significant environmental effects.") The EIS must consider the environmental effect of the proposed action as well as all reasonable alternatives to the action. The EQB is authorized to prescribe by rule those circumstances in which an EIS is required. These regulations will be amended to require an EIS in any circumstances where any major action is proposed that would be in violation of the Coastal Zone Plan. Such an inconsistent activity would presumptively have potential for significant environmental impact. While an EIS is only an informational document, such a detailed review should help lead to decisions which are sound in terms of coastal zone planning. Another provision of the policy act requires that:

> No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land, or other natural resources located within the State, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare and the State's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations will also not justify such conduct. Minnesota Statutes Section 116D.04 Subd. 6.[142]

Compliance with the Coastal Zone Plan represents a "feasible and prudent alternative," which must be chosen under this requirement, absent a showing of a strong justification. The EQB is also given direct authority to review, and, if appropriate, reverse or modify, decisions on "any State project or action significantly affecting the environment if the Board finds...that the action or project is inconsistent with the policy and standards of Section 116D.01 to 116D.06." Minnesota Statutes Section 116D.04, Subd. 9.

309

The Board will prospectively indicate that any decision by a State agency in violation of the Coastal Zone Plan will occasion such review and, where appropriate, reversal. Thus, with respect to State agency actions, an administrative review mechanism is available to monitor on a case-by-case basis CZM plan compliance.[143]

The Environmental Rights Act creates a civil action for any person to bring a lawsuit for the "protection of the air, water, land, or other natural resources located within the State, whether publicly or privately owned, from pollution, impairment, or destruction." This law would create an action for a private person or the State CZM lead agency to judicially review a decision involving a land or water use in the coastal zone. The standard of the Act requires the court to order use of a "feasible and prudent alternative" if it is less environmentally harmful.[144]

Another provision of the Act allows intervention as a party to "any person" in "any administrative, licensing, or other similar proceeding." Upon intervention, environmental considerations must be part of the proceeding and the governmental entity is advised that it must meet the "feasible and prudent alternative" standard. Thus, the State CZM lead agency, DNR, or EQB will, where appropriate intervene in local or State permit proceedings to influence those decisions in a manner consistent with the plan. Thereafter, the Rights Act would provide a basis for judicial review with a more favorable standard in terms of plan compliance than the normal administrative challenge of a permit decision.[145]

Direct State permits are required from a number of Minnesota agencies prior to a wide variety of land and water development activity. The vast majority of these permit programs are implemented by State agencies having membership on the EQB, thus they will be familiar with the CZM program. As noted previously, regulations of these agencies, as well as others with permitting responsibilities not on the EQB, will be amended to insure consistency with the Coastal Zone Plan. State permits will not be granted for activities inconsistent with the management plan.[146]

Minnesota law provides for the creation of local soil and water conservation districts having powers which can be dovetailed to assist in the implementation of the Coastal Zone Management Plan. Soil and water conservation districts are authorized in part to undertake activities designed to control and prevent soil erosion; foster land research planning and development; implement land resource use practices that reduce siltation and loss of land base through activities associated with farming, mining, construction and forestry; prevent flooding; assist in maintaining navigability of rivers and highways; preserve wildlife areas; protect the tax base and protect public lands. In order to accomplish these purposes, soil and water conservation districts may "develop comprehensive plans for the conservation of soil and water resources and for the control and prevention of soil erosion within the district." These plans are required to be consistent with "the State

310

plan for water and related land resources." Thus, the plans of these districts would have to be consistent with the Coastal Zone Management Plan. A soil and water conservation district is also empowered to undertake works of improvement to accomplish its purposes. Many of these will require State permits, however, even in cases where such permits are not required, such plans are subject to a finding by the State Water Resources Board that they are consistent with "systematic administration of State water policy." Again, a State agency is therefore given authority to review and require consistency of the conservation district improvement projects.[147]

3.3.9 Forestry

Magnitude of the Problem

Forestry activities are viewed as not generating significant pollution loads on surface water qualities and not noticeably affecting groundwater quarries. They appear to have a relatively low level of priority for management and control procedures. This is partially due to the lack of information on forestry on which to base results. If there are any problems they are localized.[148]

Current Activity and Evaluation

DNR operates a forest products utilization and marketing (U&M) program. It provides technical assistance and services to improve the utilization and marketing of Minnesota's forest resources. Improved utilization of harvested trees will increase the volume of usable products produced by each tree and reduce the volume of material left in the forest, burned or otherwise wasted. Improved markets provide the economic incentives to landowners, loggers, and wood processors to implement improved forest management and wood utilization practices.[149]

A total of 1,038 U&M assists were provided to private landowners, loggers, wood processors, and others involved with the growing, harvesting, processing, and marketing of the State's forest resources in 1976, and 830 in FY 1977. These assists included providing marketing information, resource data to expanding and new industries, and complete sawmill analysis programs designed to improve mill efficiency.[150]

The utilization of 13 million board feet and 30,000 cords of wood killed annually by the Dutch Elm disease, oak wilt disease, and normal tree mortality within the 7-county metropolitan region has been the objective of a special U&M project. The specialist and field foresters assigned to this project are working with the Metropolitan Inter-County Council, State Department of Agriculture, local units of government, and forest product industries to develop facilities that will economically convert the disease-killed trees into usable products.[151]

Small landowners in Minnesota own about seven million acres of forest land. These tax-paying holdings, owned by 150,000 small landowners, comprise about 40% of Minnesota's forest land.[152]

The big problem with many of the small forest ownerships is their poor condition. They are in need of reforestation and improvement of existing stands of trees.

The DNR is concerned with the condition of these small forested properties, and consequently is helping landowners better manage their small forests. Some of the services provided by foresters include examination of woodlands, and the preparation of forest management plans. After that, it's up to the landowners to follow the plan and improve the forest.[153]

In 1976, DNR foresters helped about 5,000 small landowners improve their forest properties. More than 108,000 acres of forest land was improved. Together, small landowners and DNR foresters are building quality forests of the future.[154]

Program goal is to improve the management of these small ownerships and bring them into increased and sustained production. This is necessary to meet the increasing demands for wood, water, wildlife, and recreation. During FY 1977 DNR foresters helped 4,500 small owners improve management on 90,000 acres of forest land. Owners installed proper forest practices, with the technical assistance of foresters. The DNR is not only interested in the dollar value of the timber; but is concerned with the wildlife habitat, watershed protection, water and solid waste pollution, and scenic beauty the forests provide.[155]

Refer to the section on recreational areas for information with regard to recreation. All the same restrictions apply in forest areas.

FOOTNOTES -- CHAPTER 3

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83. _Ibid_., page 62.

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316

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317

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141. *Ibid*., Section 3-12.

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CHAPTER 4

FRAMEWORK ANALYSIS

4.1 GENERAL

This Chapter presents the contractor's analysis of the legislative framework for the State of Minnesota. Included is the identification of the strengths and weaknesses in the framework, and the future actions which could correct the weaknesses. This analysis is based on the evaluation of the different land use activities as presented in Chapter 3.

4.2 STRENGTHS, WEAKNESSES AND FUTURE ACTIONS

The following land use activities are noted for their strengths and weaknesses. This discussion of each of them summarizes the problem, the current framework and its strengths, weaknesses and present future actions which could correct any weaknesses.

4.2.1 Urban Construction Site Runoff

Currently the only controls over construction site runoff in the State of Minnesota are exercised by local governments through their general enabling legislation for zoning and subdivision control. There are no direct State controls related to construction site runoff. The State Environmental Policy Act and Environmental Rights Act provide an individual with the opportunity to stop construction activities of governmental agencies if he can present a primeofacia case against such an activity.

The controls exercised by the local governments vary widely from jurisdiction to jurisdiction, resulting in a very fragmented implementation of existing legislation. The combination of the Environmental Rights Act and the Environmental Policy Act is relatively new and they have only recently been upheld in court. Here again, with these two acts the control is very fragmented, since the implementation of the Environmental Policy Act and the Environmental Rights Act requires an action by a specific individual. Neither the local or the current State controls provide for a uniform, even-handed approach to control construction site runoff throughout the State.

320

The need is for a coordinated framework to be developed which will allow the State and the local governments to jointly develop the specific controls necessary and to work cooperatively together in implementing them.

These controls should be broader than site construction, addressing all earth-moving activities. They should require the submittal of a plan of action, issuance of a permit based on that plan, and enforcement inspections to insure that the actions taken are in compliance with the plan. Methods to remedy problems through fines or other actions must also be included.

The implementation of such a cooperative State and local venture requires not only legislation, but the funds and staff necessary to implement the legislation. Without the proper legislation and the funding to support it, the inadequate control of construction site runoff cannot be achieved.

4.2.2 Urban Stormwater Runoff

The magnitude of the stormwater runoff problem in the State of Minnesota is currently unknown. It is hoped that the areawide and Statewide 208 Water Quality Management Programs will begin to identify the magnitude of the problem. Until the Technical Studies have been completed, it is impossible for adequate controls to be designed that are applicable to the conditions in the State of Minnesota. The controls should look at all aspects of the urban stormwater runoff problem, design aspects related to minimizing runoff before it gets into the stormwater collection system, and the treatment of the stormwater at the discharge end of the stormwater collection system. It is the Contractor's recommendation that emphasis be placed on reducing stormwater runoff at its source rather than the more expensive route of treating stormwater runoff at its discharge point.

The final determination of the methods to solve the stormwater runoff problem have yet to be made in Minnesota. It is the Contractor's understanding that controls will be developed as part of the determination of the magnitude of the problem and the ways to solve it.

4.2.3 Private Sewage Disposal

Currently a wide range of county programs and ordinances attempt to control the location of individual sewage treatment systems. Some of the county programs are very good with excellent administration, while some counties have no ordinance or no trained personnel. In an attempt to bring uniformity by the establishment of minimum Statewide guidelines for the installation of individual disposal systems, the MPCA is working with a citizens advisory committee to develop Statewide technical standards which will govern the location, construction and use of individual system. With the development of these standards the State will be able to provide guidance for the installation of the traditional septic tank system and alternative individual systems which may be developed in the future.

The implementation of these standards when they are finalized will be an important step toward developing the State and local cooperative effort to control pollution from private sewage disposal systems. It is not clear to the Contractor if these standards are intended to address problems with existing septic tank system or will only be applied to the estimated 10,000 septic tank systems installed in Minnesota each year. Without some sort of a retroactive clause, problems with current systems will remain and be uncontrolled.

PART II

SUMMARIES OF LEGISLATION

CHAPTER 5

RELEVANT LEGISLATION

5.1 GENERAL

This Chapter presents a summary of the legislative authority for the control of land use activities that may cause water pollution. Where information was available the legislation is summarized by act, with the implementing agency, affected land use activity, purpose, provisions and administrative responsibilities identified. Where the Contractor's was unable to secure information allowing summarization, the acts are listed.

The summaries of the acts are presented in the order in which they appear in the Chapter.

M.S. 89.001-89.431	State Forest Management
M.S. 93.01-93.58	Mineral Policy and Mineland Reclamation
M.S. 104.01-104.08	Flood Plain Management Act
M.S. 105-485-105-541	Shoreland Management Act
M.S. 165.42	Drainage
Chapter 115.15	Regional Water Pollution Control
Chapter 116C	Environmental Quality Council
Chapter 116D	State Environmental Policy
Chapter 271	Wild and Scenic Rivers Act

Environmental Rights Law
Minnesota Critical Areas Act
Minnesota Pollution Control Agency
Minnesota Solid Waste Recycling Law
Minnesota Solid Waste Disposal Regulations
Municipal Water Pollution Control
Regional Sanitary Sewer Districts
Regulations for the Processing of Feedlot Permits
Proposed Regulations for the Disposal of Hazardous Waste
Proposed Regulations Governing Standards for Individual Sewage Treatment Systems

POLITICAL JURISDICTION: Minnesota

Title or Reference: State Forest Management, M.S. 89.001-89.431

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: Forestry

Purpose:

To allow forests to grow, manage and harvest timber, develop recreational areas and protect wildlife.

Provisions:

1. Authorizes DNR to regulate forest practices on State forest lands.
2. Allows taxes to be forfeited on lands transferred to the State.
3. Provides for technical assistance to be given on private forest land if so requested.
4. Provides that land may be acquired by gift, direct purchase of private land and transfer of tax forfeited land by the county to the State.
5. Provides that counties receive 50% of the gross revenues acquired from State forest land within their boundaries as payment in lieu of taxes.

Administrative Responsibilities:

DNR is responsible for management of State lands, in and outside of State forests. The commissioner is responsible for ascertaining and observing the best methods of reforesting cutover lands and administering policies on forestry principals and conserve forests on the watersheds of the State.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Mineral Policy and Mineland Reclamation, M.S. 93.01-93.58

Implementing Agency: Department of Natural Resources

Affected Land Use Activities: Extractive Operations

Purpose:

To provide for the reclamation of certain lands where necessary both in the interest of general welfare and as an exercise of the police power of the State.

Provisions:

1. Stipulates that no person shall engage in or carry out a metallic mining operation without first submitting a plan for reclamation or restoration to the DNR and obtain a permit.

2. Requires a security (bonding) if the operator fails to do proper research or comply with rules and regulations.

3. States that the following factors are to be considered in determining effects of mining on the environment:

    a. Environmental impacts,

    b. Future utilization of the land,

    c. Protection of natural resources,

    d. Control of erosion,

    e. Surrounding communities,

    f. Employment and practical problems of the mine owners.

Administrative Responsibilities:

DNR is responsible for issuing permits for metallic mining operations. The Department is responsible for promulgating all necessary rules and regulations.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Flood Plain Management Act, M.S. 104.01-104.08

Implementing Agency: DNR, counties, municipalities

Affected Land Use Activities: Shoreland filling, shoreland and riverbank erosion

Purpose: To protect flood prone areas

Provisions:

1. Requires each local governmental unit (counties and municipalities) to adopt flood plain management ordinances, which are to include regulation of land use in the flood plain, for areas that are flood prone.

2. Requires that local ordinances be approved by DNR.

3. States that zoning ordinances should specify the land uses allowable in floodways and flood fringe areas.

4. Stipulates subdivision regulations should prohibit subdivision of lands subject to flooding unless hazards are overcome.

Administrative Responsibilities:

The Department of Natural Resources is responsible for coordinating and evaluating local, State and federal flood plain management activities. DNR is responsible for establishing requirements for local zoning and subdivision ordinances.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Shoreland Management Act, M.S. 105.485-105.541

Implementing Agency: DNR, counties

Affected Land Use Activities: **Shoreland filling, shoreland,riverbank erosion**

Purpose:

To preserve and enhance the quality of surface waters, conserve the economy and natural environmental values of shorelands and provide for the wise utilization of water and related land resources of the State.

Provisions:

1. Requires counties to adopt a shoreland conservation ordinance, if a county fails to do so or if its ordinance does not meet DNR's minimum standards, DNR can adopt an ordinance for the county.

2. Requires DNR to promulgate, with approval of MPCA and the Board of Health, model standards and criteria.

3. Provides DNR with the authority to implement all necessary regulations along the shorelands of public waters.

4. States that regulatory authority extends 300 feet for streams and rivers and 1,000 feet for lakes.

5. Authorizes DNR to establish lake classifications.

Administrative Responsibilities:

The Department of Environmental Resources is responsible for developing and implementing rules and regulations with regard to the program. Counties through adoption of ordinances acceptable to DNR are responsible for enforcing adopted ordinances.

328

POLITICAL JURISDICTION: Minnesota

Title or Reference: Drainage, M.S. 165.42

Implementing Agency: DNR, county boards, district courts

Affected Land Use Activities: Drainage

Purpose:

To regulate the construction of public drainage systems or control structures.

Provisions:

1. Authorizes county boards and district courts with the authority to regulate the construction of public drainage systems or control structures.
2. Requires that county boards or district courts approve a drain; however, if public waters are involved, a permit from DNR is required.
3. States DNR determines what is a public water and issues permits to drain such waters.
4. States that the Commissioner of DNR is to promulgate a list of criteria that county boards or district courts must consider when establishing and improving drainage systems.

Administrative Responsibilities:

County boards or district courts are required to approve construction of public drainage systems or control structures.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Regional Water Pollution Control: 115.15

Implementing Agency: Minnesota Water Pollution Control Agency, Water Pollution Control Advisory Committee, Sanitary Districts

Affected Land Use Activities: All categories

Purpose:

To safeguard the waters of the State from pollution and prevent any new pollution and abate the existing pollution.

Provisions:

1. Establishes the Water Pollution Control Advisory Committee and details its membership, duties and responsibilities.
2. Establishes the authority to create sanitary districts and the procedure to create such districts.
3. Provides the board of managers of a sanitary district with the authority to run the district.
4. Provides the district with the power to construct, install, maintain, improve and operate any system, works or facilities to regulate and control the disposal of sewage.
5. Provides the district with the authority to regulate and construct septic tanks.
6. Provides districts with powers as are vested in villages.
7. Provides the board of managers with the authority to control all funds, property and affairs of the district. Likewise the board shall be vested with powers similar to a village council.
8. Authorizes the board to impose levies, assessments, service charges, to borrow money, and issue bonds.

Administrative Responsibilities:

The Water Pollution Control Advisory Committee is responsible for assisting the agency in formulating a general Statewide comprehensive policy for conservation, utilization and development of water resources.

330

POLITICAL JURISDICTION: Minnesota

Title or Reference: Chapter 116C, Environmental Quality Council

Implementing Agency: Environmental Quality Council

Affected Land Use Activities: All categories

Purpose:

To establish the Environmental Quality Council to find solutions to environmental problems that require the interaction of agencies.

Provisions:

1. Establishes the Environmental Quality Council, its duties and powers.
2. Authorizes the Environmental Quality Council to:
    a. Initiate interdepartment investigations,
    b. Review programs of State agencies that significantly affect the environment and coordinate those it determines are interdepartmental in nature and insure agency compliance with State environmental policy,
    c. Review environmental regulations and criteria for granting and denying permits by State agencies and resolve conflicts involving State agencies,
    d. Requires State agencies to submit all proposed legislation of major significance relating to the environment.
3. States that the Council shall cooperate with regional development commissions in appropriate matters of environmental concern.
4. Provides the Council with the authority to establish interdepartmental or citizen task forces to study particular problems.
5. States that the Council shall assist the governor on all environmental issues.
6. Establishes the Citizens Advisory Committee, its staff, duties and powers to:
    a. Review and appraise various programs and activities of the State,
    b. Hold meetings for the purpose of gathering information or public or private opinions concerning the adequacy of the State's environmental policies,

  c. Give advice and counsel to the Council,

  d. Make recommendations to the governor, legislature and public on any needed State policy or program.

7. Requires the Council to prepare a long-range plan and program.

8. Provides the Council with the authority to apply for federal funds.

Administrative Responsibilities:

The Environmental Quality Council is responsible for advising the governor, the State legislature and the public on all environmental issues.

332

POLITICAL JURISDICTION: Minnesota

Title or Reference: Chapter 116D, State Environmental Policy

Implementing Agency: Environmental Quality Council

Affected Land Use Activities: All categories

Purpose:

To declare a State policy that will encourage productive and enjoyable harmony between man and his environment.

Provisions:

1. Sets forth the State environmental policies.

2. Stipulates that where there is a potential for significant environmental effects resulting from any major governmental action or from any private action of more than local significance, such action shall be preceded by a detailed statement prepared by the agency, or where no governmental permit is required by the responsible person.

3. Makes the Environmental Quality Council responsible for establishing rules and guidelines in those instances which environmental impact statements are required.

4. States that, prior to the preparation of a final environmental impact statement, the person responsible for the statement shall consult with and request the comments of every governmental office which has jurisdiction by law or special expertise with respect to any environmental effect involved. Copies of the drafts of such statements and the comments and views of the appropriate offices shall be made available to the Council and the public. The final detailed environmental impact statement and the comments received thereon shall precede final decisions on the proposed action and shall accompany the proposal through an administrative review process.

5. States that no State action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment or destruction of the air, water, land or other natural resources located within the State, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety and welfare and the State's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.

6. States that, prior to the final decision upon any State project or action significantly affecting the environment or for which an environmental impact statement is required, or within 10 days thereafter, the Council may delay implementation of the action or project by notice to the agency or department and to interested parties. Thereafter, within 45 days of such notice, the Council may reverse or modify the decisions or proposal where it finds, upon notice and hearing, that the action or project is inconsistent with the policy and standards of sections 116D.01 to 116D.06. Any aggrieved party may seek judicial review pursuant to Chapter 15.

7. Requires all agencies of the State government to review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein that prohibit full compliance with the purposes and provisions of section 116D.01 to 116D.06, and shall propose to the governor not later than July 1, 1974, such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes and procedures set forth in Laws 1973, Chapter 412.

Administrative Responsibilities:

The Environmental Quality Council is responsible for establishing guidelines and rules, and criteria for review of environmental impact statements. The appropriate State agencies and individuals are responsible for submitting these statements to the Council.

334

POLITICAL JURISDICTION: Minnesota

Title or Reference: Chapter 271, Wild and Scenic Rivers Act

Implementing Agency: Department of Natural Resources

Affected Land Use Activites: Forested areas, recreation

Purpose:

To protect and preserve rivers possessing outstanding scenic, recreational, natural, historical, scientific, and similar values.

Provisions:

1. Requires localities to adopt or amend ordinances to comply with standards and criteria of the management plan.

2. Requires a management plan to be drawn up by DNR prior to designation of a wild and scenic river. The plan stipulates allowable setbacks, structure heights, subdivision regulations, vegetative cuttings, etc.

Administrative Responsibilities:

DNR is responsible for preparing a management plan for the designated area.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Environmental Rights Law

Implementing Agency: District courts

Affected Land Use Activities: All categories

Purpose:

To provide adequate civil remedies to protect air, water, land and other natural resources located within the State from pollution, impairment or destruction.

Provisions:

1. Authorizes any person residing in the State to maintain a civil action in the district court for declaratory or equitable relief in the name of the State against any person, for the protection of the air, water, land, or other natural resources located in the State.

2. Allows the attorney general to intervene as a matter of right and to appoint counsel where as a result of such intervention he may represent conflicting or adverse interests.

3. States that where the subject of the action is governed by any environmental quality standard, limitation, regulation, rule, license or permit promulgated or issued by a State agency, wherever the plaintiff shall have to make a prima facia showing that the defendant violates or is likely to violate the standards. The defendant may rebut the prima facia showing by submittance of evidence to the contrary.

4. States that any person residing in the State may maintain a civil action in the district court. In such an action the plaintiff shall have the burden of proof that the standard, rule, order or license is inadequate to protect the air, water, land or other natural resources.

Administrative Responsibilities:

The Environmental Rights Law allows each person, if they so desire, an adequate civil remedy to protect the air, water, land and other natural resources within the State.

336

POLITICAL JURISDICTION: Minnesota

Title or Reference: Minnesota Critical Areas Act

Implementing Agency: Minnesota Environmental Quality Council

Affected Land Use Activities: All categories

Purpose:

To develop certain areas of the State possessing important historic, cultural, or esthetic values, or natural systems which perform functions of greater than local significance, could result in irreversible damage to these resources, decrease their value and utility for public purposes. or unreasonably endanger life and property.

Provisions:

1. Requires the Minnesota Environmental Quality Council to prepare criteria for selection of areas of critical concern.

2. Requires the Council to study and assess the resources and development of the State and recommend to the governor areas to be designated.

3. Requires the local unit of government of an area or areas of critical concerns to submit a plan to protect the critical areas to the appropriate regional council.

4. Stipulates that if a local governmental unit fails to prepare a plan and regulations the Council may adopt a plan and regulations applicable to that jurisdiction.

5. Authorizes local governmental units the power to issue development permits.

6. Authorizes the Council to prepare guidelines for dispersing funds to local units of government or regional development commissions for planning.

Administrative Responsibilities:

The Minnesota Environmental Quality Council is responsible for identifying areas of critical concern and assisting local units of government in the preparation of plans and regulations for the wise use of those areas.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Minnesota Pollution Control Agency

Implementing Agency: Minnesota Pollution Control Agency

Affected Land Use Activities: **All categories**

Purpose:

To safeguard the waters of the State from pollution, prevent any new pollution and abate the existing pollution.

Provisions:

1. Defines words and phrases used with respect to water pollution in the State.

2. Details the duties and responsibilities of the Minnesota Pollution Control Agency.

3. Requires any person who constructs, installs or operates a disposal system to have a permit.

4. Stipulates that the Agency is responsible for enforcing provisions of the Act.

Administrative Responsibilities:

The Minnesota Pollution Control Agency is responsible for enforcing all laws relating to the pollution of any waters in the State, investigating the extent, character, and effect of pollution on the waters, establishing pollution standards, encouraging waste treatment, issuing permits, requiring discontinuance of the discharge of sewage and prohibiting storage of any liquid or solid waste in an improper manner.

338

POLITICAL JURISDICTION: Minnesota

Title or Reference: Minnesota Solid Wastes Recycling Law

Implementing Agency: Minnesota Pollution Control Agency

Affected Land Use Activities: Solid waste

Purpose:

To encourage both the reduction of the amount and type of material entering the solid waste stream and the reuse and the recycling of materials.

Provisions:

1. Establishes a grant program to any region, municipality or institution for designing and implementing regional programs for material conservation which take into account the variation in solid waste generation through the State.

2. Authorizes the Minnesota Pollution Control Agency to promulgate rules for the administration of the grant.

3. Authorizes the Agency to administer the program.

4. Authorizes the Agency to advise and assist industry and business in the development and packaging of containers consistent with environmental protection goals of the State.

5. States that a user fee of $.15 per cubic yard shall be levied on solid waste materials disposed of at a permitted landfill, or at a permitted incinerator. Any county with a population of less than 50,000 may, by resolution of its county board, elect to exempt all permitted landfills and incinerators from charging a user fee.

6. Any person who violates any provision of this Act shall be guilty of a misdemeanor. Each day that a violation occurs or continues may be deemed a separate offense.

Administrative Responsibilities:

The Minnesota Pollution Control Agency is responsible for administering a grant program that would encourage solid waste conservation. The Agency shall also advise and assist industry and business in developing packing and containers that would protect the environment from solid waste disposal problems that can occur.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Minnesota Solid Waste Disposal Regulations

Implementing Agency: Minnesota Pollution Control Agency, Division of Solid Waste

Affected Land Use Activities: Solid Waste

Purpose:

To establish solid waste disposal standards.

Provisions:

1. Authorizes the Pollution Control Agency to adopt standards for the collection, transportation, and disposal of solid waste.
2. Stipulates that any standards or regulations adopted shall apply to any solid waste management system in the State.
3. Makes the agency responsible for enforcement of the regulations.
4. Stipulates methods by which to store solid waste accumulated at a premise, business establishment or industry.
5. Hold owners and occupants of any establishment/residence responsible for collection and transportation of all solid waste.
6. Establishes standards for vehicles and containers used for collection and transportation of solid waste.
7. Prohibits open burning at all immediate and final solid waste disposal sites.
8. Requires sites or facilities used for the intermediate and final disposal of solid wastes to have a permit. Each application for a permit shall be accompanied by a plan.
9. Details the practices a person must comply with to maintain or operate a sanitary landfill.
10. Details practices that must be followed in operating an incinerator.
11. Requires any person who wishes to install a composting operation to obtain a permit.
12. Details the procedures that must be followed in abandoning a land disposal site.

340

Administrative Responsibilities:

The Stream Pollution Control Agency is responsible for establishing standards for the collection, transportation and disposal of solid waste. The Agency is also responsible for enforcing the Act.

POLITICAL JURISDICTION: Minnesota

Title or Reference: Municipal Water Pollution Control Agency

Implementing Agency: Minnesota Pollution Control Agencies

Affected Land Use Activities: All Categories

Purpose:

To safeguard the waters of the State from pollution and prevent any new pollution and abate the existing pollution

Provisions:

1. Requires the Agency to prepare a long-range plan and program.
2. Classifies the waters of the State and adopts purity standards.
3. Provides the Agency with the authority to enforce the Act in case municipalities fail to enforce provisions of the Act.
4. Confers the power upon all towns to construct, operate, install, acquire, maintain and operate disposal systems. To do so a town may levy taxes, special assessments and issue bonds.
5. Authorizes municipalities with the power to enter into an agreement to provide waste disposal services.

Administrative Responsibilities:

The Act makes the Minnesota Pollution Control Agency responsible for preparing a long-range comprehensive plan.

342

POLITICAL JURISDICTION: Minnesota

Title or Reference: Regional Sanitary Sewer Districts

Implementing Agency: Regional Sanitary Sewer Districts

Affected Land Use Activities: Urban areas

Purpose:

To safeguard the waters of the State from pollution and prevent any new pollution and abate the existing pollution.

Provisions:

1. Authorizes the creation of regional sanitary districts with the same responsibilities, duties and functions as listed under sanitary districts.
2. Creates Minnesota State water pollution control fund.
3. Authorizes the Agency to administer grants and loan programs.
4. Provides the Agency with the authority to issue bonds, levy taxes and special assessments.

Administrative Responsibilities:

The Minnesota Pollution Control Agency is responsible for administering the grant and loan programs.

343

POLITICAL JURISDICTION: Minnesota

Title or Reference: Regulations for the Processing of Feedlot Permits

Implementing Agency: Counties, Minnesota Pollution Control Agency

Affected Land Use Activities: Animal Feedlots

Purpose:

To regulate the location and operation of animal feedlots that precludes potential pollution hazards to the land, air or waters.

Provisions:

1. Authorizes counties to engage in processing animal feedlot permits.
2. Authorizes counties to issue, modify, or impose conditions upon animal feedlots.
3. Requires a permit for all livestock feedlots, poultry lots and other animal lots which, after April 16, 1971, began operation, expanded existing operations by increasing the number of animal units, modified existing operations or constructed new facilities (but did not increase animal units) or changed ownership (but did not increase animal units).
4. States that if a county determines that any livestock feedlot, poultry lot or animal lot, whether it existed or not prior to April 16, 1971, is in fact polluting or constitutes a potential pollution hazard may be required to submit an application for a permit to the county containing plans for pollution abatement. Where a county has notified MPCA of a potential pollution hazard, it shall also notify MPCA as to whether or not the operator has been informed of the requirement for a feedlot permit and pollution control plans under SW 53.
5. Details the information to be included on all permit applications.
6. Authorizes the county with the authority to revoke animal feedlot permits.
7. Requires the county to keep records of all correspondence and material relating to feedlot permits processed by the county.

Administrative Responsibilities:

Counties who desire to assume processing animal feedlot permits are responsible for issuing, denying, modifying, imposing conditions upon or revoking permits.

344

POLITICAL JURISDICTION: Minnesota

Title or Reference: Proposed Regulations for the Disposal of Hazardous Waste

Implementing Agency: Minnesota Pollution Control Agency

Affected Land Use Activities: Solid Waste

Purpose:

To regulate the identification, classification, storage, labeling, transportation, treatment, processing, and disposal of hazardous waste.

Provisions:

1. Lists wastes considered hazardous.
2. Describes the procedures and criteria that should be used in wastes.
3. States that wastes evaluated and not determined hazardous shall be certified.
4. Stipulates that each generator who is producing hazardous waste in the state or who is producing a hazardous waste outside the state that is being transported to a location within the state must submit a disclosure statement.
5. Details labelling requirements.
6. Establishes criteria for the location, operation and closure of a hazardous waste facility.
7. Establishes criteria for the transportation of hazardous waste.
8. Describes the application procedures, the issuance, and conditions of the hazardous waste facility permit.
9. Setails the information that must be submitted in an application for a hazardous waste facility permit.
10. Establishes requirements for the preparation of hazardous waste shipping papers by generators.
11. Establishes procedures for agency review of county actions pertaining to hazardous waste management and the procedures for submission of documents in the event the county ordinance is approved by the Agency.

Administrative Responsibilities:

The Minnesota Pollution Control Agency is responsible for administering the hazardous waste facility permit program. The Agency also establishes requirements for storage, labeling, transportation, treatment, processing and disposal of hazardous waste.

345

POLITICAL JURISDICTION: Minnesota

Title or Reference: Proposed Rules Governing Standards for Individual Sewage Treatment Systems

Implementing Agency: Minnesota Pollution Control Agency, local units of government

Affected Land Use Activities: Private Sewage Disposal

Purpose:

To provide the minimum standards and criteria for the design, location, installation, use and maintenance of individual sewage treatment systems, and thus protect the surface and ground waters of the state, and promote the public health and general welfare.

Provisions:

1. Describes the procedures for evaluating all proposed sites for individual sewage treatment systems.
2. Describes building sewers.
3. Establishes standard for locating, designing, installing, using and maintaining sewage or septic tanks.
4. Allows alternative sewage treatment systems to be used or when a standard system can not be installed.
5. Establishes standards for the design, location, installation, use and maintenance of alternative sewage systems.

Administrative Responsibilities:

The Minnesota Pollution Control Agency is responsible for establishing standards for proper design, location, installation, use and maintenance of individual sewage treatment systems. The administration and enforcement of these standards are to be conducted by local units of government.

346

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347